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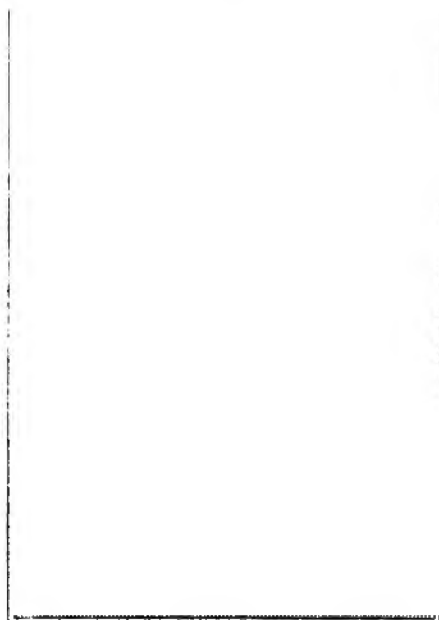
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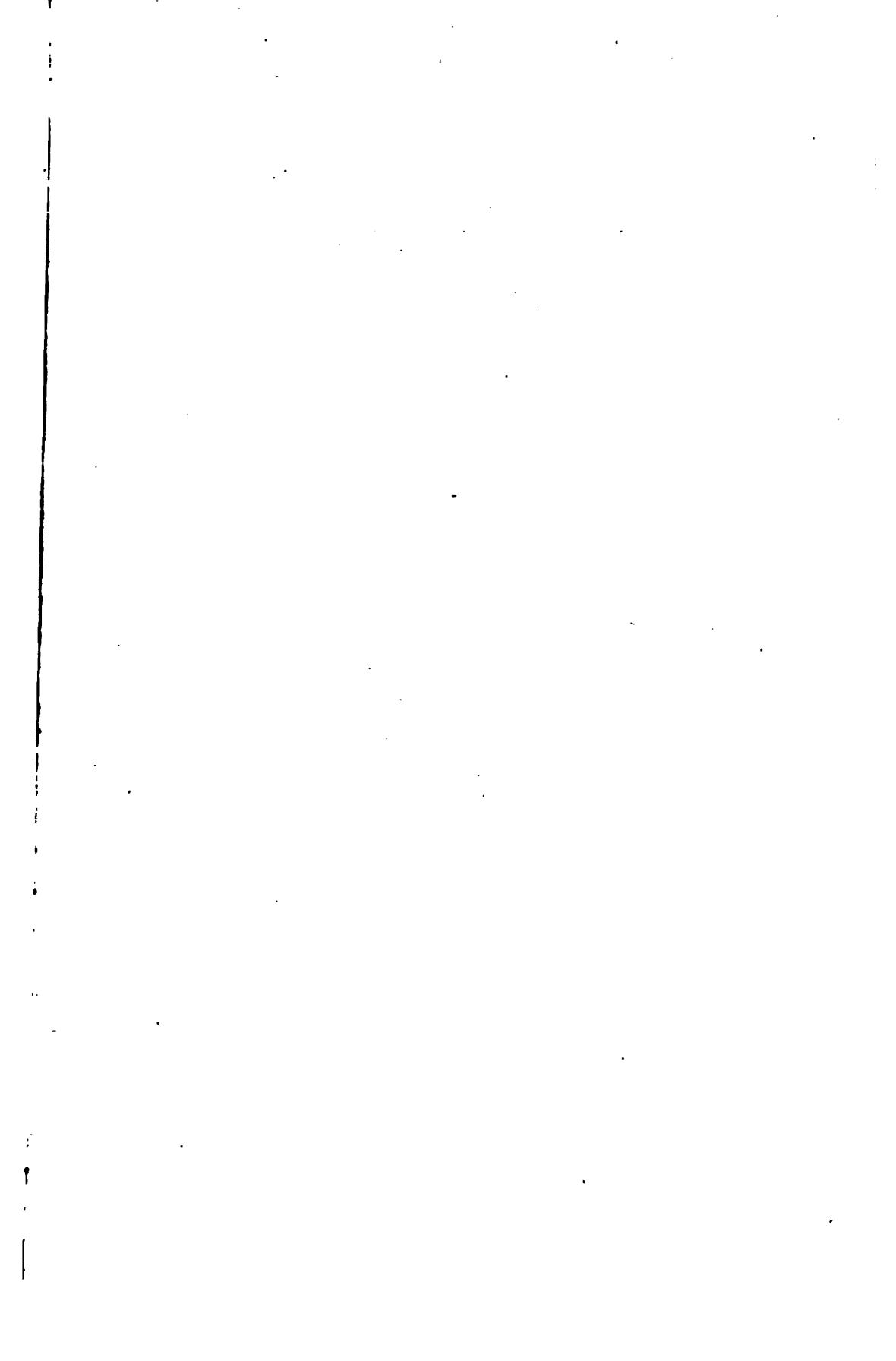


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"CONFIDENCES



THE  
AMERICAN  
5-6488  
Amateur Photographer.

VOLUME VII.

JANUARY-DECEMBER, 1895.

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1895.

THE OUTING COMPANY, LIMITED,  
NEW YORK, N. Y.

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# THE AMERICAN AMATEUR PHOTOGRAPHER.

VOL. VII.

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No. 1.

## With the Camera in Newfoundland.

BY JOHN FRETWELL.

HAVING occasion to make a journey to Newfoundland last July, I took with me both hand and stand camera and a Clemens & Gilbert tele-photographic lens, and since the facilities for tourist travel in Newfoundland are likely to be very much greater in 1895 than they were this year, I think some brief notes on the best way of travel there may be interesting to your readers.

I went with very modest expectations, but think I have never made a journey with more satisfactory results, in proportion to the money expended. It is generally said that when two Englishmen meet at breakfast, one says to the other, "Let us go out and kill something," and in accordance therewith most of my companions were loaded either with guns or fishing rods, even the clergyman. I could not help wishing that the great optician who has given us "The Naturalist's Camera," would also invent some means of teaching wild animals how to distinguish between the innocent photographer like myself and their possible murderers. The caribou and the ptarmigan, the whale and the "puffpig," as the islanders call the porpoise, kept so far away from me that to photograph them was impossible, though I saw plenty of them; and the only animals that evinced the slightest inclination to be photographed were the mongrel curs that seem to have driven every self-respecting Newfoundland dog out of Newfoundland, and certain bipeds who accosted me everywhere with the stereotyped question, "Be you the tin-type man?"

On my first entry into the "City Hotel" at St. Johns, I saw quite a pile of the "You press the button and we do the rest" style of camera, belonging to some members of the unfortunate "Miranda" expedition, who, fortunately for themselves, had left that steamer on the Labrador coast, and so escaped shipwreck. Returning I met at the "Sydney Hotel" the remainder of that party, who, after paying \$500 a head for their excursion, had to pay a further lump sum of \$4,000 to the Gloucester fishing schooner, which brought them safely back to Nova Scotia, and had lost all their scientific instruments and clothing.

Judging from my own experience, and from my conversation with sundry of these gentlemen, I would suggest to those American amateurs who, as I hope, will profit by my experience and visit Newfoundland next

year, that they should club together, and that each should carry a different instrument, and then pool the results.

My tele-photographic lens, although I got some very good results with it, required too long an exposure, so that I was obliged to seek some friendly shelter to protect my 22 inch camera from the air currents, which were never altogether absent. Here Dallmeyer's latest naturalist's camera, permitting of instantaneous exposures, would be invaluable. With it, at long distance, I could have secured from the moving ship many a fine geological detail, when the 8 inch lens of my hand camera had too small a focus. While I secured some really fine panoramic views by a series of exposures which I afterwards joined together, there were many other cases in which the view could only be taken from the ship, and then only the "Cylindrographe Moessard" would have served the purpose.

But on such a journey, where it is desirable to go in light marching order, and where many objects cannot be approached within the range of an ordinary lens, even one camera is often a burdensome addition to one's luggage, and but for the extraordinary courtesy of my fellow-travelers, some of whom were always ready to aid in carrying my apparatus, I should have been obliged to abandon some of the most attractive views. Of ordinary views such as tourists buy, Mr. S. H. Parsons, the St. Johns photographer, had a fine collection from all parts of Newfoundland and Saint Pierre, but while I never make a view if I can buy it, those which I most desired, illustrating the natural history and geology of the Island, are unsalable in the ordinary trade, and therefore I must take them myself, or secure them by exchange with amateurs of like tastes.

The ocean steamers, which run from New York or Philadelphia to Newfoundland must keep so far away from the shore that no photographs of interest can be taken except at the very entrance to St. Johns' harbor.

But two little steamers leave Halifax once a fortnight, the Harlawe for the French shore, the most attractive of all to the artist, and well described in Benjamin's "Cruise of the Alice May" and the "Saint Pierre," which was to stop at the southern outports and Saint Pierre, and then land us at Placentia. In this I took passage from Halifax, paying \$19 for the journey, and reaching Placentia on the Saturday morning after embarking, a journey of 4½ days, giving me time to stop and make photographs at St. Peters' in the Bradore Lakes at Baddeck, Sydney, N. B., at several of the southern outports, and at the French colony of St. Pierre Miquelon. Both Captain Angrove, of the "St. Pierre," and my fellow-travelers were singularly agreeable and well-informed people, and

gave me all the information which I found it impossible to get from the guide-books, enabling me to obtain comfortable accommodation at the most out-of-the-way places.

From Placentia to St. Johns is a railway journey of about eighty-four miles, and thence I went partly by rail and partly by boat as far as the Newfoundland & Western Railroad is built, some miles beyond the Great Falls on the Exploits River. There I was the guest of the contractor, Mr. Reid, of Montreal, who hopes to have completed the line to one of the western outports next year and then it will be possible for the tourist going by the "Harlawe" from Halifax to Saint George's Bay to cross the island by rail and return by the southern steamer. From Exploits Bay I went north by the "Grand Lake" to Labrador, calling at six ports on the Labrador coast of Belle Isle Straits and passing seventeen icebergs, even in August, on the way. Captain Delaney was kind enough to steer so near to the icebergs that I could make photographs of them as large as the size of my dry plates would permit.

I returned by the same ship to St. Johns, and the solitary drawback to the pleasure of that whole journey, was a young man who could neither play nor sing, and yet persisted in trying to sing "Sweet Marie" and to accompany himself on the piano. Captain Delaney had one good arrangement on board, in which our ocean greyhounds are singularly deficient. A fine large map of the route was hung up in the cabin so that all the passengers could consult it and books about the island.

I was delighted when I found that he was coming to the western outports also, and although I could have gone by rail to Placentia and joined his ship there, I preferred to go with him round by the straight shore of Avalon and Cape Race.

I was very sorry to leave him, but found the Harlawe which brought me back to Sydney a very comfortable boat. At Sydney I lingered some days to visit Louisbourg, and rejoiced to see how American energy, under the Whitney syndicate of Boston, is developing the coal mines there and practically annexing Cape Breton, in an economic point of view, to the United States.

Next year the Whitney Railroad from Sydney to Louisbourg will be completed, and then it will be possible to go by rail all the way from New York to Louisbourg, and thence in about six hours to Port aux Basques in Newfoundland, where the traveler can connect with the steamers either for the French shore or for Placentia, Saint Pierre and St. Johns. While none of the American guide-books give any satisfactory information about the island, I found a very good one published this year at St. Johns; "Newfoundland as It Is," by the Reverend Moses Harvey, and it may be obtained by sending a dollar to the author.

I have just seen enough of the island to wish to make another journey, armed with better tools, and in company with other amateur photographers, next year.

The following shows the expenses of a short tour starting from Boston, Mass.:

First day. From Boston to Halifax with Stateroom and Food. ....	\$10.50
Second day. A day in Halifax. ....	2.50
Third day. By Saint Pierre to Placentia. ....	19.00
Seventh day. Placentia to St. Johns, and food. ....	5.00
Fourteenth day. A week in St. Johns. ....	15.00
Fifteenth. St. Johns to Labrador and Flowercove. ....	12.00
Twentieth day. Lodging at St. Johns, Flower cove, and steamer Harlawe back to Halifax. ....	22.11
Twenty-fifth day in Halifax. ....	2.50
Twenty-sixth day. Halifax to Boston, as above. ....	10.50
Total. ....	\$99.00

Or allowing four days, and \$21.00 for incidentals, a month's excursion could be made to and round this "strange country in the waters" for \$120.00, and if I may judge from my own experience, the journey will be rich in pleasure and profit to the photographic amateur, the geologist, the botanist and the student of politics, who believes in the "manifest destiny" of these United States of ours.

## Fish Photography.

BY M. Y. BEACH.

THE amateur photographer desirous of making studies of fish and marine life will find excellent opportunities in and about San Diego harbor in southern California. The fish are large and gamey. The accompanying picture of a shark and a black sea bass represents an hour's catch from one of the ocean piers. The black bass is of the true bass species. It is the counterpart of the black bass found in the fresh water lakes of the east, except that it is a giant compared to the fresh water fish. The bass here pictured weighed nearly 400 pounds. The lucky captor was fishing for smaller fish with an ordinary stout hand line when the big bass seized the hook and started out to sea. The angler

paid out the line rapidly until the bass stopped running. Then he pulled the fish toward him gently. Again the bass darted seaward and stopped. The fisherman pulled him toward shore, this time bringing the huge captive a little nearer to the beach. After repeating these tactics of pulling and hauling for nearly half an hour the monster was finally drawn into shallow water where he thrashed about so violently that it was necessary to break his skull with an axe.

Another way of killing sharks and bass is to insert the hook in a codfish and throw the bait forty feet or so from the boat. Inside of the codfish is a piece of dynamite attached to an electric wire. This wire is

FIRST PRIZE IN THE "AMERICAN AMATEUR PHOTOGRAPHER" CHAMPION  
COMPETITION, 1894.

Won by Alfred Clements, of Philadelphia.

attached to the fish line and connected with a battery in the boat. The voracious shark or bass will rise and swallow the tempting codfish. When it is safely stowed away in the stomach of the big fish the angler touches the button completing the electric circuit and the dynamite does the

rest. The objection to this method of angling is that the fish are blown to pieces and consequently of less value commercially.

The basking sharks along the coast grow to a tremendous size. Frequently they are caught, the fish measuring 32 feet long, from the liver of which 180 gallons of oil are taken. The skin of such a shark weighs 1,500 pounds. It has a small throat and does not eat men. These sharks are easily photographed. They swim near the surface and do not mind if a boat is rowed close beside them. The camera fiend has no terror for a basking shark. The lazy fish will bask in the sun all day and permit any number of snap shots to be taken. When struck with a harpoon the creature becomes lively enough to endanger the attacking boat unless the craft be skillfully handled. Some of these sharks are forty to fifty feet long.

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## Beginners' Column.

CHAPTER XV.—BLUE PRINTING.

BY JOHN CLARKE.

SINCE writing the last chapter there has appeared in *The British Journal of Photography* a formula and method of platinum toning based on some experiments of W. B. Bolton, that I have found so suitable for most purposes, but especially for toning gelatino-chloride prints, as to make it worthy of a place here.

For convenience, make a stock solution by dissolving a 15 grain tube of potassium chloroplatinite in 15 drachms of water, acidulated with two or three minims of nitric acid, and mark "a grain to the drachm." The toning bath consists of potassium chloroplatinite one grain (one drachm of the stock solution), six grains of oxalic acid, and ten ounces of water; which may be made up just before using, as *ripening* is not necessary. The printing need hardly be so deep as for gold toning, but a few experiments will show just to what extent it should be carried.

The prints are first washed in two changes of water, and then immersed in about a two per cent.—say, ten grains to the ounce, solution of potassium-bromide. In this solution they will become yellow and the delicate half-tones apparently disappear. They are again washed in two changes of water, and placed in the toning solution, where, for the first few minutes, the degradation will seem to continue. By and by, however, something almost akin to development will commence. The deeper shadows will acquire a cinnamon brown shade, and the half-tones and lighter shades appear as vigorous as before immersion in the bromide solution. From this point the color will go on through regular stages,



"WINTER, YOSEMITE."

By GEORGE FISK .





each step in advance seeming to give additional vigor to the image ; cinnamon-brown, sepia, chocolate, deep red-brown and darker and darker shades of reddish black, without any tendency to the well known purplish slaty shades of overtoning by gold, and resulting in colors very different from, but I think very much better, than those known as *photographic*.

When the desired color has been reached, the prints are rinsed in water, then in water containing a very little sodium carbonate, and transferred to the fixing solution of about one part of hypo to eight of water. After ten minutes in the fixing bath the prints are washed in six or eight changes of water, and dried in the ordinary way.

It will be noticed that only such prints as were printed considerably deeper than they were intended to be when finished lost much in the fixing bath, while such as, for gold toning, would be thought much under printed, lost nothing at all. This doubtless arises from the fact that the over-printed specimens acquired a deep enough color before much platinum had been deposited, while those containing less reduced silver in the image received a much larger quantity of the more stable metal.

#### BLUE PRINTS.

Instruction in printing would hardly be complete without some account of this old and well known method. Not that it can take the place of any of the other methods or, for ordinary purposes, enter into competition with them; but to "see how a negative prints," or to produce a few copies for certain special purposes with the least possible trouble; to ornament note paper, menu cards, etc., it is more conveniently useful than any of them.

Blue printing, like platinum and several other methods, is an iron process, based on the fact that a ferric salt, by exposure to light, is reduced to a ferrous, and in that state enters into a chemical union with the cyanogen, forming a ferro-cyanide, cyanide of iron or *Prussian blue*. The relative proportions of the ferri-cyanide and ammonia citrate recommended by various workers are as varied as are the shades of blue and brilliance of the prints, but their color and quality are more dependent on the paper employed than on the formula, the latitude in that direction being considerable. Book paper, as a rule, is too soft to be suitable, and probably the resin size generally used on it, is also unfavorable. A rather heavy hard-surface, close-grained animal sized wove paper, such as the best qualities of writing paper, answers admirably. Very beautiful results may also be obtained for a certain class of subjects on rough drawing paper, although most of the samples that I have come across were improved by re-sizing, either by immersion in a ten grain solution of gelatine, or arrowroot starch applied with a sponge.

Make two stock solutions as follows:

A			
Ferrieyanide of potassium	-	-	600 grains.
Water	-	-	8 ounces.

B			
Ammoniocitrate of iron	-	-	800 grains.
Water	-	-	8 ounces.

Filter, and if tightly corked and kept in the dark, they will keep indefinitely, but if the same funnel be employed for both care must be taken to see that it is thoroughly cleaned between the operations.

Just when about to be used mix equal parts of the two solutions, and only as much as is to be used at once as the mixture rapidly deteriorates. It has been said that the addition of a trace of oxalic acid, not more than a grain to the ounce, improves the color.

The paper may be coated either by floating in the ordinary way, or applied with a sponge. Where a large quantity is to be coated the former is to be preferred, but for only a few sheets at a time the latter is both more convenient and economical. A sponge brush may be made by partially stuffing a piece of fine sponge into three or four inches of half-inch glass tube, or a small wide mouth bottle by way of handle, and if thoroughly cleaned each time, it will last indefinitely. The paper may be cut to any convenient size and fastened by pins at the four corners on a smooth board a little larger. First moisten the sponge so that it will absorb water freely, squeeze it dry, and then take up just as much of the solution as will enable it to be applied to the paper without running. Begin at the top and brush along backwards and forwards horizontally to the bottom, and then vertically from one side to another, passing along and up and down rapidly but steadily and lightly so as to secure a smooth coating. If the ball of sponge outside the bottle be, say, about an inch and a half, it will carry sufficient solution to perfectly coat a 12x10 sheet, giving it up mostly during the horizontal strokes, but still moist enough to smooth the coating by the vertical strokes. Sheet after sheet may be coated in this way and pinned up by two corners to dry. When dry, which will be in a very short time, it should be cut to size and packed secure from light and moisture, in which condition it will keep good for two or three weeks. The preparation of blue paper is most conveniently carried in the evening with the ordinary gas or lamp light, and although it is comparatively insensitive it should not be transferred to or from the printing frame or examined while in it except under yellow light, as exposure to even very subdued white light tends to the degradation of the whites.

Printing should be carried on in sunlight and continued until the shadows assume a bronzed appearance, a few experiments will show just exactly how deep, for the best results. On removal from the printing frame all that remains is to immerse them in water when the image will appear in full vigor and brilliant color and in a short time the whites become quite pure. Wash in two or three changes of water and hang up to dry in bright light. Drying in bright sunshine sometimes improves the color, and, according to the *Photographic Times Annual*, a too weak print may be intensified by immersion in a two grain solution of ferric chloride, and again washing in several changes of water, but this I have not tried.

A good blue print, brilliant in color and pure in the whites, is a beautiful thing, especially suitable for some subjects, as permanent as any and more so than most silver prints, and gives a charming variety to the usual tones of a collection. But they need not remain blue, as the material of which the image is composed readily lends itself to the production of other colors. If the blue print is immersed in an alkaline solution, a rather weak solution of caustic potass, say, the blue will give place to a brown and apparently become very much weaker, but on being washed in several changes of water and immersed in a solution of gallic acid or tannin it will acquire its former vigor, but changed to a more or less fine black. There is, indeed, hardly a limit to the changes of color that may be produced by varying the material of the last solution; and the beginner may learn much by spending a leisure hour in experimenting with as many of the salts of the metals as he has at command.

Blue printing is largely employed by architects and designers for copying drawings on transfer paper, which give white lines on a blue ground, but to the amateur photographer it is chiefly interesting as a ready means of *trying* his negatives, and, as I have already said, of enabling him, with a minimum of trouble, to make interesting souvenirs of dinner parties, and other social gatherings. One of my friends, accustomed to make long tours with his hand camera, and develop by the way, carries with him two bottles of the solution, and as soon as he has secured a few negatives of the places visited coats some of the post cards of the country, and delights the friends at home with copies printed on them. Nor does the pleasure end with their reception, as when he returns they form texts for pleasant reminiscences during the long winter evenings, and whenever a few friends meet, and some source of amusement is needed, the production of the cards just fills the bill.

**NOTE.**—Don't fail to get our next number. It will contain over twenty reproductions of some of the best work produced in the United States by means of the camera.

## Arc Light Photography.

BY M. Y. BEACH.

A BRANCH of photography not much practiced by amateurs offers such an easy opportunity for amusement as to be worthy of notice. It is photographing under an electric arc light. On a hotel porch in Southern California the writer photographed a group of guests seated beneath an arc light with a degree of success which prompts him to continue efforts in this direction. The accompanying picture is the second negative taken under the electric light with a twelve dollar hand camera on a Seed's No. 26 plate exposed forty seconds. The definition of the picture would, of course, be better with a high grade lens. The lower half of the shade surrounding the light was of ground glass. Arc lights are now so common in all city streets and public buildings that ambitious photographers can use the camera almost as easily and freely at night as during the day. Electric light photography has the advantage of being the same in the matter of time of exposure at all times where the strength of the current is the same, as it usually is. Unlike sun light the arc illumination is constant. It is just the same at seven o'clock as at midnight. As the ground glass about an arc light softens the light rays, the dazzling influences of a sun picture are avoided and a more natural picture of a face is obtainable because the eyes of the subject are not affected by any undue glare. In large cities where the water fronts are illuminated by arc lights, night photography ought to offer a field for securing unique pictures. Foliage takes well lighted by electricity. Although it is impossible to take snap shots under the ordinary electric light, the short exposure of thirty to forty seconds enables the amateur to get many valuable negatives of subjects thus lighted.

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THE AMERICAN "BLUE BOOK" FOR 1895 which is now being prepared for the press by Mr. Walter Sprange, of Beach Bluff, Mass., promises to be a very valuable work of reference for all interested in photography, whether as a business, profession, or as a pastime. We are advised by Mr. Sprange that he has labored assiduously to obtain the material for its pages for more than a year, and that, at the repeated suggestion received from correspondents, he has decided upon making the work a complete Photographic Directory of the entire North American Continent. The lists of names will include dealers, opticians, chemists, and professional photographers. In addition to this the Blue Book will contain carefully revised lists of photographic and scientific (allied to photography) societies in all other countries, "dark rooms," and dealers, importers and exporters, tariff regulations, photographic periodical publications and many additional pages of interesting and useful general and scientific information. The whole to form a reliable universal photographic handbook and directory.

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## A Trip to Florida and Cuba.

NELLIE BERRY ORBISON.

ONE of the first glimpses of jolly southern life which we had on our trip to Florida and Cuba, was snapped by our camerist at Macon, Georgia, where at the station three little negro boys hailed us with—"Say, cap, want to see us dance for a nickel?" Whereupon they were "caught" in the midst of "winging." It is an open question whether they danced for the pure love of it or for what the nickels would buy.

That evening at Jacksonville, Florida, we got a fine view of the beautiful St. John's River by moonlight; an hour later we were in St. Augustine, and at once were sensible of the charm and quaintness of that delightful city.

We spoke almost in whispers on St. George street, fearful that the people across the way might hear us, so narrow it was. One felt as if walking in a street in the doll kingdom. The balconies of the oldest houses are built so near the ground that I wondered if, in days gone by, the gay señors did not have a comparatively easy time making love to their sweethearts.

Through the narrow street we walked, wondering at the quaint shops, fascinated by their windows, some containing live and stuffed alligators, others, rare oriental work, eastern jewels and soft palmetto hats, trimmed with a profusion of dried grasses. At last we reached the "City Gateway" at the head of St. George street—a landmark left out of the many which are so fast disappearing. We were somewhat disappointed in the old towers. They are overtopped now by the modern dwellings beside them, and the large hotel beyond. They were partially ruined in the beginning of the present century but have been clumsily rebuilt. After leaving the historic portion of the city, we went to the "square of hotels." But how can one express one's first impressions of those magnificent hotels, the Ponce de Leon, Alcazar and Cordova. The change from St. George street to Cordova and Almeda streets is wonderful. At first you rebel against the new, but, when you reflect that these buildings are distinctly Spanish in their architecture, you forget your rebellious feelings and admire with all your heart the beauty and grandeur of these castle-like hotels.

In the parlors of the Ponce de Leon I was most attracted by the paintings of Koppan, who has so wonderfully portrayed Shakespeare's heroines. The carved mantel extending to the ceiling, with its clock of transparent Mexican onyx, which at night is luminous, one can not fail to notice. Throughout the entire building there is perfect harmony in all the furnishings.

We were loath to leave St. Augustine; one could spend several weeks there sightseeing delightfully and profitably.

On the road to Tampa we passed through Orlando, Sanford, Palatka, Maitland, Winter Park, etc., each town teeming with orange groves and palms in great abundance. The desire to stop the train and walk through an orange grove and pick as many oranges as we could carry,



became stronger and stronger as we passed by so many, but we were due at Tampa that evening and the engine sped along accordingly. Tampa is decidedly uninteresting to tourists straight from St. Augustine. Indeed, viewing it even with an unprejudiced eye, its one attraction is the Tampa Bay Hotel. After a ride of about twenty minutes we reached Port Tampa, the terminus of the South Florida railroad and the landing-place of several large ocean steamers. A trestle is built out seven-eighths of a mile over the water where it is shallow, over which the train took us to the inn, a charming hotel built on piles, with wide galleries half way around it. To look out of the windows one might imagine one's self on a steamer without the dreaded motion. At the end of the long wharf were anchored several steamers, one, the "Olivette," on which we were to sail for Cuba, and which we regarded with great interest, a sea voyage being an inexperienced pleasure (?) for several of us.

We sailed that night and all went well until time for breakfast, when some of us made a brave effort to go to the table only to leave immediately with a saddened expression, and to remain in obscurity until dinner.

I had read so much about the water between Port Tampa and Havana being so very blue, that the color I saw, as blue as it was, did not satisfy me. However, we found the intense blue farther on between Key West and Havana. Our party revived toward afternoon and, on deck, watched eagerly for a sight of Key West. As we were about to make a landing, the water on our side of the steamer was suddenly alive with small boys, white and black, ready to dive for money. They went down eagerly for silver pieces, but never saw coppers. We tried them several times.

Every one on board got off at Key West, happy to tread on terra firma, even if the dust was an inch thick. It is said that the chief commercial interests of Key West are in cigars, fisheries, turtles and sponges; but in our stroll, although we passed by several large tobacco factories, it seemed to us a very uninteresting place, quaint but dirty, with more dust than anything else.

We sailed from Key West that night at ten o'clock, taking the ninety miles to Havana leisurely, as no foreign vessel is allowed to enter the harbor before sunrise or after sunset.

As the sun rose the following morning every one was on deck, on the qui vive to catch a glimpse of Havana. Its harbor is considered one of the most beautiful in the world, and is guarded at the entrance by the fort of Morro castle. Our steamer was anchored some distance from the shore, and at once was besieged by gondola-like boats, representing the different hotels. We climbed down the ladder into a boat from the "Inglaterra Hotel" and were steered to the wharf, passing several large steamers, a man-of-war, coast surveying vessels, and many little tugs and fishing craft. The scene was a dazzling one. The sun's rays reflected in the water, lighting up the whole city, made a fine subject for a painting.

After landing at the wharf, where everything was confusion and lottery ticket salesmen, (who thrust their greasy papers in our faces, and chattered away in their foreign and musical language), we were driven in a victoria, which is the popular vehicle in Havana, over the rough cobblestone roads, through streets built very narrow to avoid the heat

of the sun, to the "Gran Hotel Inglaterra" which faces the central park. The Inglaterra is considered the finest hotel in Havana and the only one that can boast of an elevator. On entering we were surprised to find the office, writing-room and café all in one. As early as it was, people were eating their first or early breakfast, which consists of coffee, the strongest and blackest I ever tasted, oranges, eggs and bread. The hours for this meal were from six until nine; then the regular breakfast from nine until twelve, and dinner from five until eight.

We were taken through long corridors with rooms on either side; these, because of their barred windows, innocent of glass, resembled nothing so much as a prison. I think the bedrooms in Havana impress you more than anything else with the idea that you certainly are in a foreign land. They are so unlike ours in every respect; so bare and quaint, with tiled floors, barred windows, huge armoires or wardrobes, and odd little dressing tables on which stands an earthen jar, formerly called a "monkey," and which, before the manufacture of ice, was covered and suspended from the wall by chains, containing water, which was in this manner kept cool.

We found two single iron beds, with curtained tops and lace valances of cheap material. They were not couches of ease by any means, as the cotton mattress was hardly more than two inches thick, and the pillows and bolster were stuffed with a pulp prepared from the bark of trees and about the consistency of bran.

We made many signs that morning whenever we had occasion to ring for the bell boy, who was, to our despair, utterly Cuban. But at late breakfast our spirits revived somewhat when we learned that a few of the waiters spoke French as well as Spanish. Immediately in my best French I said to our waiter "Donnez moi de l'eau, s'il vous plaît." Whereupon he elevated his nose and said scornfully: "Ah, spika Inglis! I *kiss* Inglis!" My French was not in demand any more you may be very sure, since garçon's English was so superior to it.

We were unable to go sight-seeing until in the afternoon, as the heat in the middle of the day was so intense. The early mornings and evenings in Havana are delightful, but one thinks longingly of a siesta about noon-time. Soon after our arrival we were fortunate enough to meet a charming Cuban gentleman, who kindly acted as our interpreter on many of our drives. One of these was taken to the Vedado, a suburban town, reached by a fine road laid along by the bay. After lunching at "Hotel Chaix" we drove to the Columbus Cemetery, whose magnificent entrance gate is very imposing. On our return we stopped at the summer residence of the Governor-General. The grounds were beautiful; and the two-storied house built of adobe almost entirely hidden by vines and plants. There were avenues of royal palms, the bark was smooth and velvety, the foliage waving majestically high in the air; a little lake surrounded by palms and flowers, and a miniature water-fall, which was propelled by a machine, hidden, but so distinctly heard that it took away all of the romance and serenity of the scene. We hope that in the season for enjoying this lake and water-fall, the machine is oiled.

After dinner that evening we went to the Tacon opera house—"Teatro de Tacon"—one of the largest in the world. The entrance to this place

of amusement is through a large, brilliantly lighted café, where, between the acts, ladies and gentlemen, armed with admission tickets, come for refreshments, and are recalled by the ringing of a bell to the opera house. The building is handsomely furnished. It has six tiers, each tier divided into stalls or boxes for six persons. On the extreme right as you enter and in the first tier is the Governor-General's box adorned with the crown of Spain.

In the orchestra of thirty pieces, we were surprised to find that the first violin, first cornet, bassoon and violoncello, were played by Cuban negroes. However we learned afterwards that they are generally considered the best musicians in Havana, and each orchestra is made up of many of them. We returned to the hotel at midnight, and after a bite to eat, retired, the sweet voice of the tenor Ranner, ringing in our ears.

The following morning we visited several tobacco factories, stopping on the way to watch a funeral procession. The coffin was borne on the shoulders of friends a part of the way through the streets, followed by the hearse which was drawn by four gaily caparisoned horses, the driver and footman in livery, with three cornered black hats. Immense wreaths of flowers decorated the sides of the hearse which was followed by about fifty carriages, men being sole occupants, some of whom were reading, others smoking, and none seemingly impressed by the solemnity of the occasion. Ladies never attend the ceremonies at the cemetery.

We went through one of the largest tobacco factories in the city, where, in a large room the employes—a mixture of natives, Cuban negroes and Chinese—were preparing the tobacco and rolling cigars. A man sat on a high stool in the center of the room, reading aloud a Spanish newspaper. Our Cuban friend told us he was reading about the Queen of Spain, who was ill with "la grippe."

In another factory a man was reading a novel aloud—between times—(I had almost said between *lines*) smoking a cigarette. In fact we found that a Cuban and his cigarette are almost inseparable, the women and children as much addicted to the habit as the men. In the café the waiter lays aside his cigarette to take your orders, resuming it as he goes to fill them.

We continued our drive through the residence portion of the city, where adjoining a palatial house was invariably to be found a miserable hut. At almost every window and on the balconies, which are so characteristic of Havana houses, we saw dirty children, only partially clad; women and negroes, lazy and untidy peering through the bars or leaning over the railings. We passed a string of a dozen or more horses each tied to the tail of the one in front of him, being led to the bay where they are washed daily. These horses are hitched to long low cars, resembling somewhat our omnibus, and used in like manner to convey passengers.

There were tandem teams, consisting of seven or eight horses, drawing queer looking carts containing vegetables, etc., horses laden with green fodder, almost concealing them; others whose pack saddles contained milk and fruits, and still others carrying wines and liquors,—called a portable bar-room.

A most amusing and unlooked for proceeding was the manner of de-

livering milk to the Cubans. A man drives his cows—always accompanied by their calves—to the door and milks them in full view of the buyer and all outsiders. Would not this system, which admits of no possible watering of the milk, be appreciated in our cities.

The Andalusian horses are very beautiful, and we saw quite a number in Havana. Their long tails were plaited tight, and the end carried over the rider's arm. The trappings were very gay and well-suited to the proud-looking graceful creatures.

The men in our party gave up to us a morning for shopping while they attended a chicken fight. The toreador was in Mexico, so that no bull fight took place during our stay. We visited a large fan store on Obispo street, which, by the way, is the principal shopping street in Havana, and has the appearance of a great bazaar, because of its awnings stretched from one side to the other. We were in ecstasies over the various kinds of fans, the most popular being a cheap paper fan highly colored with scenes from the bull fight. Pedestrians go in single file on the sidewalks, which are not often over a foot and a half wide.

The agent and interpreter of the Inglaterra Hotel had arranged a trip to Mananao, a town nine miles distant, where we visited one of the finest sugar plantations on the island—the Toledo. Eighty thousand sacks are sent annually to the refinery, and oxen are employed for transportation.

We then drove to a large pineapple grove, where five thousand dozen pineapples were growing. We stood around the banana bark hut, the roof thatched with leaves, and enjoyed a perfect feast of the delicious fruit.

The country through which we passed was very picturesque; the humble cacti growing near the glorious palms; the houses, with their windmill ornamentation, scattered over the rather rolling country; the negroes busy in the fields, plowing with their very primitive plow, a crooked stick.

Sunday morning we visited the different cathedrals. The principal one is where the ashes of Columbus are said to lie. The religion of Havana, with the exception of about two thousand Baptists, is Roman Catholic. Their Sunday there is over at noon, and during the afternoon on the principal drives there is a continuous stream of carriages. Sunday night is a gala one and reminded me of Mardi Gras in New Orleans. The streets are brilliantly lighted and crowded with promenaders. There were three or four mask balls in full swing, all of the theatres open, concerts by the military bands in the Plaza and other parks, and all sorts of festivities.

The following day at noon we sailed on the Mascotte from dear Havana, fascinated to the last, and reluctantly bidding it "Adios, adios."

**THE SCHAEFER ALBUM.**—The good features of this album, providing an easy way of mounting and preserving glacé photographs, we are told by a correspondent, are spoiled by the manufacturers giving the pages a cheap, tawdry, Dutch look, in using elaborate gilt borders. It is strange that such a good article should be spoiled in this manner, when a neat, simple, plain gilt or white line would be so much better. The manufacturers should use better taste.

### Causes for Imperfect Films.

THERE are certain causes for improvements in rollable films which seem to be rather neglected by manufacturers of both films and cameras. One of the common characteristic defects is a black tree-like appearance on the finished negative. At other times there is a small irregular black line. Some years ago when regular sizes of plates were difficult to obtain, and occasionally the user was obliged to cut his own plates, I found myself under the necessity of cutting a considerable number of plates, to obtain the proper sizes for my camera. This work I performed in a perfectly dark room, not having at the time a light which I considered sufficiently safe to use on such work. I soon discovered that the gelatine film was very much in the condition of an electric machine and repeatedly when I cut the glass and broke the film a flash of light could be seen. The very slow plates which were in use at that time prevented me then from noticing any fogging as a result from these slight flashes, and perhaps had there been such fogging it would not have been noticed with the general poor quality of the plates. With the remarkably rapid emulsions which are generally used at the present time for roll films the case is different, and my theory is that many of the markings are due to the electric discharges which take place in the camera or during the rolling. In a very dry atmosphere it might be possible, and appearances make it probable, that in drawing the film along with the emulsion in contact with the rubbing surface, sufficient electric discharges take place to give the markings in question. The remedy seems clear, that is: To release the pressure on the face of the film slightly when it is being unwound. I don't wish to be understood as referring to the black spots surrounded by a halo, for these the emulsion maker must hold himself responsible. They are due solely to dirt or decomposition, and can be found in the film as the result of dirt in the drying.—*Roman*.

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### An Active Club.

OUR attention has been called to the prospectus or programme issued last summer and fall by the camera club of Vienna, Austria, wherein an elaboration of subjects for exhibition and discussion is set forth. It may supply hints for American societies to pursue. The following is a translation of the circular sent out to the members:

Of the means to elevate photography amongst our members, two have been developed to a high degree: the personal intercourse between members, and our "Journal." The large attendance in the club rooms, and the cordial recognition accorded our journal by an English photographic publication of high standing

(*Photography*, London, 1894, page 387), witness this fact. But we must not omit to recognize a third important point, the regular exhibitions in the club rooms, which leave much to be desired.

The participation in these exhibitions is not so general as it should be. Only the extraordinary productivity of a small circle of untiring workers in the field of art photography have enabled us to offer the interesting work of members which we have shown. It is desirable that this circle be enlarged, and that our members send us work of such a nature as has not heretofore been seen at our exhibitions. We refer to scientific work of all kinds, and particularly work which has reference to ethnology and archæology. In the latter field our non-resident members especially, might exhibit to great advantage. How many a castle, palace, and church, apart from the stream of human activity, contains gems of architecture, sculpture, painting, or artistic metal work, that have never been described or reproduced. How many an old interesting autograph or church register lies hidden away, which might assume additional interest when turned over to archæological societies, besides lending variety and interest to our journal.

The following exhibitions have been planned for the season of 1894-1895 :

**NOVEMBER.**—1. Maiden exhibition. No jury of admission. Three prizes. For beginners and such members who have never exhibited, only.

**DECEMBER.**—2. Exhibition of artistic photographs. Open to all photographers. Jury of admission. No prizes.

**JANUARY, 1895.**—3. Anonymous competition. No jury of admission. For members only. Three prizes.

**FEBRUARY.**—4. Humorous exhibition. For members only. No jury of admission. Three humorous prizes.

**MARCH.**—5. Selected pictures from the various exhibitions of the year. Sale of pictures.

In addition, the following weekly exhibitions will be held if the entries warrant :

6.—One man exhibition, showing the progress of our prominent members, whose name will be announced in due time.

7.—Portraits and study heads.

8.—Reproductions.

9.—Exposures with artificial lighting.

10.—Enlargements. (Comparison with original desired.)

11.—Carbon prints.

12.—Clouds.

13.—Diapositives and lantern slides.

14.—Stereoscopy.

15.—Microphotography.

16.—Astrophotography.

17.—Medical photography.

18.—Balloon photography.

19.—Chemico-technical exhibition. (Copying and toning processes, intensification, development, and kindred subjects).

20.—Platinum prints.

21.—Silver platinum prints.

22.—Eyeglass and pinhole exposures.

- 23.—Still life and genre.
- 24.—Pictures with retouching effects and combination prints.
- 25.—Exposures with net—ring—and other diaphragms.
- 26.—Interiors and architecture.
- 27.—Landscapes.
- 28.—Types of races.
- 29.—Photogrammetry and photographic perspective.
- 30.—Animal studies.
- 31.—Flower studies.
- 32.—Groups.
- 33.—Sporting studies.
- 34.—Military studies.
- 35.—Defective prints of a humorous nature.

Following this list it is stated entries are to be sent in as soon as possible but they are not binding; they are simply to enable the Board of Directors to provide for arrangements according to the number of entries.

**WALPOLE SODIUM HYPOSULPHITE.**—We are informed that this chemically pure brand of hypo which has come into favor with many leading photographers is now to be had through Mr. G. Gennert, 24 East 13th Street, New York, who is to be the sole selling agent for the middle and southern states. The Walpole Company have published a card giving the chemical formulas of the photographic chemicals they manufacture, stating the per cent. of salt in each formula given. It is very convenient and will be sent by them to amateurs and others on application to their office. Walpole Chemical Company, Boston, Mass.

### Micro-Photo Sculptures.

**I**N what we may term the earlier days of photography the nature, the capabilities and the possibilities of swollen gelatine were, or seem to have been, better known than they now are, when processes dependent upon gelatine are getting into a groove.

Circumstances some time ago led us into a very delightful application of swollen gelatine, and in the belief that it is unknown to the great majority of our readers, we shall give such a description of it as will enable them to produce works similar to several which, while writing this, are laying scattered over the editorial table for examination by all interested. Let us first describe what these photo-sculptures are like, previous to giving such directions as will enable any one to make them. Those immediately in front of us are in form of circular slabs of hard plaster of Paris, absolutely flat and smooth in all but an enlarged reproduction of any suitable microscopic object, which stands up in relief from the flat surface much as does the relievo on a finely struck medal or coin. Ours have the advantage in respect of dimensions, for they constitute a circle, with a diameter of three and a half inches. They have a raised border, for the two-fold purpose of imparting a neatness of finish to these medallion sculptures and for protecting the delicate markings reproduced so faithfully. The subjects comprise diatoms and other microscopic structures, and insects of various kinds—pleurasigma, fleas and the like. The process of reproduction in plaster consists in effecting a conversion of lights and shades of any suitable object, when seen in the microscope by transmitted light, into reliefs and hollows of vigor sufficient

to be apparent to every one. If the degree of relief required were only a slight one, such as suffices in the making of a photo for process printing, then might it be got by taking an ordinary gelatine negative surface dry and applying heat, by which the image would be raised in low relief. But in the present case we want something of a more pronounced nature than can be obtained by drying with heat. A good, well defined negative is pre-supposed. To obtain this, is now happily a work entailing no difficulty whatever, seeing so much has been written concerning photo-micrography. Some judgment, however, must be imparted in the selection of objects, and to a beginner we would suggest an object to be found in nearly every collection—the *pulex irritans*—a well mounted specimen of which makes a very effective enlargement of about two and three-quarter inches. A flea being a very large object (from the microscopic point of view) does not entail the necessity for employing a costly instrument in making a negative of it. Inserting the eye-piece of the microscope (which has been thrown into a horizontal position) into the front of a quarter-plate camera and focusing sharply, an exposure of about one-half minute, more or less according to the light, will give a vigorous impressed image, capable of being developed into a strong negative. Having obtained a negative, the next operation is to make from it a transparency. This is done by superposition, in the usual way of producing lantern-slides. A plate of glass about four inches square having been made clean and placed in a level position, is coated with bichromatized gelatine. The following proportions are those recommended by the late Mr. Walter B. Woodbury for similar purposes nearly thirty-one years ago, and having worked much with them, we can confirm their excellence.

Bi-chromate of potash, 20 grains; gelatine,  $1\frac{1}{2}$  ozs.; water, 4 ozs. The gelatine is first placed in the water, which in the course of two or three hours will have been absorbed or nearly so by it. It is then liquified until warm, when the bi-chromate is added. When the glass plate is coated it must be allowed to remain undisturbed until quite dry. It is then ready to be printed upon.

For the very finest class of subjects it is advisable to strip the gelatine film from the glass in order to take advantage of the fine glossy surface arising from contact with the glass. In this case it is needless to remark that this is the surface which must be next to the cliché when placed in the printing frame. Time of exposure varies from two to five minutes, according to the power of the light. We may here observe that we have obtained sharp, fine reliefs by printing upon the upper or outside of the bichromatized gelatine coating without removing it from the glass at all. When printed, the film or plate is thrown into a vessel of cold water, where it is allowed to remain for two or three minutes, by which time the image will be seen to stand out in bold relief from the smooth, polished ground. By application of blotting paper the surface moisture is removed and a cast may be taken from the gelatine relief by any suitable means—plaster of Paris in this case. This method, so far, is similar to that adopted by Pretsch in his process in photo-galvanic engraving, only he obtained his casting in copper by electrotyping. But in the process now advocated for a special purpose a plaster cast leaves nothing to be desired. If a little common alum is mixed with the plaster, it ensures the easy detachment of the cast from the cliché. After having become quite dry, the border may have a finish imparted to it by aid of a hand lathe, and from an original thus finished hundreds of casts may be obtained, especially if a copper electrotpe has been made from the first one, the last being in every respect as sharp as the first.

As aids to education in microscopic research these micro-photo sculptures ought to be valuable.—*British Journal*, May 11th.



## Second Annual Lantern Slide Competition.

### REPORT OF JUDGES.—AWARDS.

*To the Editors of THE AMERICAN AMATEUR PHOTOGRAPHER:*

In submitting a report of our examination and awards of your Second Annual Lantern Slide Competition we have endeavored to carry out the judging on the lines laid down and the instructions given by you; or, in other words, to give credit where the work really deserved it, as regards artistic quality and technical merit.

There were eleven sets of slides contributed by eight competitors, and no slides in Class V., the botanical class. In Class I., genre and figure work, there were two competitors; the average of each differing but fifteen; too low, however, in either case to entitle either to an award.

In Class II., Landscapes and Marines, with or without figures; there were four competitors, two averaging within seventy of each other, the others being much too low.

In Class III., Architecture, there were two competitors, each having excellent averages, one being ninety-five ahead of the other.

In Class IV., Hand camera work, there were two competitors, one being two hundred ahead of the other, but each was too low in general average to be entitled to an award.

The following are the awards as the result of our examination:

Class II. Landscapes.	{	Emilie V. Clarkson,	-	Silver medal.
		William B. Post,	- -	Bronze medal.
Class III. Architecture.	{	E. R. Ashton,	-	Silver medal.
		Samuel L. Coulthurst,	-	Bronze medal.

No awards in any other classes. Respectfully,

New York, January, 1895.

WALTER S. WOODBURY, } Judges.  
ALFRED STIEGLITZ, }

## To Our Readers.

WE beg to announce to our readers that, beginning with this issue, Mr. Alfred Stieglitz assumes sole charge of the general management of THE AMERICAN AMATEUR PHOTOGRAPHER. He will be the responsible editor of same, and all communications intended for the editorial department should be sent to his address, 162-166 Leonard Street, New York City. Mr. Beach will continue to edit the scientific and society news departments.

We do not think it necessary to call your attention to the improvement in the magazine for the past year over the years before, and can only assure you that the same independent and fearless course will be pursued in the future, and that there will be a steady advance in the literary and artistic quality of THE AMERICAN AMATEUR in the coming year.

THE OUTING CO., LIMITED,

Publishers of the *Amateur Photographer*.

# THE AMERICAN AMATEUR PHOTOGRAPHER

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A Monthly Review of Amateur Photography.

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No. 1.

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ALFRED STIEGLITZ.

EDITORS:

F. C. BEACH.

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## Editorial Comment.

*Our Illustrations*—"Confidences," by Shapoor Bhedwar, of India, is one of this photographer's many successful attempts at pictorial photography. The subject is pleasing and delicately treated, although rather commonplace. Mr. Bhedwar is the foremost pupil of R. W. Robinson. "Harmony," by John E. Austin, of Maidstone, England, is another pleasing picture. Mr. Austin, a few years ago, was probably the champion English amateur, for wherever his pictures were shown, they swept the deck. Through some misunderstanding or other, Mr. Austin has withdrawn from publicity; which means a loss to photographic exhibitions generally. Mr. Austin was always clever, if not always original. "Winter, Yosemite," by Geo. Fiske, gives one an idea of the grandeur of some American scenery. Photographically speaking, the original of this production is perfect.

*"American Amateur Photographer" Lantern Slide Competition*—We greatly regret the little interest shown in our Second Annual Lantern Slide Competition, and must confess to having been greatly disappointed in the quality of the few sets of slides sent us. THE AMERICAN AMATEUR PHOTOGRAPHER Medal is a most difficult one to win, and many prominent winners in other competitions and exhibitions have signally failed to gain recognition in any one of our competitions. The medal is not offered as an

advertisement for the magazine, but as an incentive for high quality in pictorial photography, and is, therefore well worth striving for. A report of the judges will be found upon another page.

*"American Amateur Photographer" Champion Competition, 1894.*—In our next number we shall bring a series of twenty or more of the best pictures sent in to our Champion Competition. They include the work of Alfred Clements, Alfred Stieglitz, Clarence B. Moore, John E. Dumont, Miss Fitz and George C. Baker. Mr. Wilms sent his lot of pictures to the Faling (England) Exhibition, where, by the way, he was awarded a bronze medal, with orders to send the batch of prints to Messrs. Davison and Robinson in time for the judging of the "American Amateur Photographer" Champion Competition. It appears that the pictures were never sent to London as requested but were returned to the maker direct. Mr. Wilms has our sympathies, but we feel no responsibility whatsoever in the matter, as Mr. Wilms acted as he did, on his own risk entirely. On another page we reproduce the cup awarded to the fortunate winner. It is our intention to have a similar competition this year, with a slight alteration in some of the conditions. We are open to suggestions.

*Catharine Weed Ward.*—On retiring from our editorial staff Mrs. Ward does so not on account of any lack of interest in the future of the magazine, but for business and other reasons, she having permanently located in London and become one of the editors of that excellent magazine, *The Photogram*. She will, however, continue to be an occasional contributor, sending as heretofore, we hope, interesting and spicy articles.

*The Joint Exhibitions.*—After seven years of experience in giving these annual public exhibitions in rotation in Philadelphia, New York and Boston, the club in the latter city whose turn was set down for next spring, voted last month to throw up the sponge and withdraw from the arrangement because no one in the club can be found who will sacrifice the amount of time necessary to make it a success, yet the conditions in Boston are more favorable than any other city because the Art Institute there has been had free, on condition that no entrance fee is charged. We are sorry, in view of the rising art photographers resident in Boston, that the club has seen fit to take such a decided step. It may lead to the organization of another society on broader lines, where greater interest in the art side of photography will be shown, and possibly to the creation of a photographic salon. The New York and Philadelphia Societies have virtually decided to abandon the joint exhibition idea and carry on public exhibitions at longer intervals on their own account independently. Experience has shown that they entail a large amount of labor and expense on the exhibiting society without apparently bringing back adequate returns in the shape of increased membership. However, this is not the

J. E. AUSTIN.

"HARMONY."



broadest view of the matter. It is certain that they tend to elevate the reputation of the society, to interest its members in purely photographic work, and stimulate them to do their best, besides acting as a school of comparison in displaying the best examples of different processes. We think it is a mistake to give up these exhibitions and we hope some mutual plan of work may be arranged by which we may not only have the exhibitions but have them on a higher plane or standard.

*Value of Lantern Slide Exhibitions to Societies.*—In remarking upon the value of the work of societies to the beginner, *The Camera and Lantern Review*, gives some very useful hints, saying among other things that the instruction evenings arranged for beginners should be valuable.

Ninety per cent. of those who join photographic societies, do so in order to gain knowledge.

In every society there are men who have the knowledge and ability to test for themselves new processes, and we think it is for them to put the result of their researches before their fellow members, and we feel sure there is a reaction in this direction.

We see no reason why societies should not draw from outside sources for their lantern evenings, and we are certainly of opinion that "lantern slide exchange" between societies should be cultivated. The exchange of fifty slides of average quality, with notes on technique clearly stated, would give an admirable object lesson, and one from which much might be learnt. These slides and notes should be in the hands of the man who is going to show them at least a clear day and night, so that he may acquire some knowledge of what he is going to show on the screen. The usual method of showing lantern slides is absurd; the lecturer (*sic*) has never, as a rule, seen the slide till it is shown to the audience; he possibly has a list of titles, as a rule written very unintelligibly, and nothing more. How is he to make an exhibition of lantern slides interesting under such conditions? He does not, but contents himself with "cutting the record," as to the number "passed through the lantern," and the public go away dazed, remembering nothing, and with no very much higher appreciation of photography, although by its help and the lantern we are able to speak to them in a universal language. If the lecturer has nothing to say, at least let the public see the picture and form their own opinion as to its merits as a pictorial composition; the public are good judges in that respect. We have found, in showing lantern slides, when our notes have been very meagre, it a good plan to leave the slide on till the public applaud; we then know that they appreciate the work shown. We would formulate a rule as unalterable as those of the Medes and Persians, that under no pretence should more than sixty slides be shown in an hour. Music may be used, with discretion, provided the lecturer and accompanist are in accord, and have either been through the slides together and made notes of appropriate music, or, the lecturer having made himself thoroughly acquainted with the subjects, prepared a list of music which would help him; we should not then have such incongruity. For instance, we once heard an accompanist hammering away "We won't go home till morning" very appropriately whilst a snap-shot photograph was shown of a gentleman (?) standing outside a public house, evidently rather mixed as to his whereabouts, followed by one of those "quick changes" in which operators revel, revealing a beautiful interior of a cathedral; still the hateful tune went on, until the accompanist looked and then changed to a mournful dirge, so far as we recollect a few bars from the "Dead March in Saul."

It is in the power of photographic societies to change all this and we sincerely hope they will set themselves the task.

We quite agree with some of the points stated. To a mixed American audience generally 120 slides can be shown in an hour without fatigue, leaving out the music, and it has proved an excellent plan to mix in along with outside slides a few made by members of the society, by way of encouragement.

*Transportation Embargo on Gas Cylinders.*—On November 15, 1894, the five express companies forming what is generally regarded as an express-age pool, including Adams Express, United States Express, American Express, Wells-Fargo Express, and National Express sent out a notice that on and after that date they would refuse to take or carry gas cylinders freshly charged with gas, no matter at what pressure. But they would take such cylinders after a portion of the gas had been used and return them to the manufacturers at full rates. It appears to be an extremely unjust, unreasonable discrimination, looking as if one timid person representing all the companies got it up. Possibly it may have been the explosion of cylinders a year ago at Albany, where the pressure of the gas was 1,800 pounds to the square inch, that may have prejudiced this person, whoever he is, against all cylinders. But the large cylinders which have been used for years and carried for years by the several express companies with perfect safety, only have the gas compressed to 225 pounds to the square inch, and the explosion of one through careless handling is rarely heard of. In England the manufacturers of gas enclose their high pressure cylinders, having the gas compressed to 1,800 pounds to the square inch, in a sort of a willow basket network, and the express companies take and transport them with perfect safety. We think the express companies little realize the inconvenience to the consumers, especially those desiring to give exhibitions for charitable or lecture purposes, and physicians, this absurd mandate against gas will create. Instead of making such a prohibitive order the companies can require the gas manufacturers to mark the pressure of the gas on the shipping tag, and fix a limit above which pressure they will refuse to take the cylinders. Or the manufacturers can be required to basket the cylinders in the same manner that glass bottles or other vessels are basketed. We think if consumers would show up the absurdity of the present order by sending protests to the several headquarters of the companies, some notice would be taken of it, and perhaps relief be afforded.

*New Method of Preserving Limes.*—We were shown, lately, a new plan of preserving limes, gotten up by Mr. Harry W. Smith, of the Newark

Camera Club, which is simple and effective. He takes a fresh lime and envelopes it completely in tin foil, then slips the whole in melted paraffine wax, which makes it water-tight and air-tight. There is so much waste by limes slacking, when packed in the ordinary tin screw-top cans, that this plan is economical.

We have heard that limes wrapped in three layers of waxed paper, the joints of one being overlapped by the other, have been used, the limes being perfectly preserved.

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## Society News.

SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.—A special meeting of the Society was held on Friday evening, December 7th, to listen to a lecture by Mr. Frederick E. Ives, of Philadelphia, on "Composite Heliochromy and Three Color Printing," given in connection with the exhibition of photo-mechanical prints and printing processes held by the Society. A large audience was present and much interest was shown in Mr. Ives' improvements. He explained the principles of the tricolor process and illustrated the several steps by means of a Colt electric lantern and polariscope, in a very interesting and clear way. After this he described Ives' latest method of making tricolor lantern slides which consisted in making three duplicate prints on thin celluloid coated with a bichromated gelatine much on the same plan as the carbon process, from the three separate negatives of the respective color values, blue, pink, red and yellow. After the celluloid bichromated transparencies are made, the one intended to represent the yellow color is dipped in a dye of that color, the one for pink dipped in another pink dye and the third into a blue dye. The three are then superposed over each other so that they exactly register and then clamped between two glasses making a colored lantern slide in the colors of nature which can be put in any lantern. The approximate correct color for each film is found out by the shadows of the three films when put together, being black, if they are of a brownish tinge or some other color the dye of one film has to be soaked out and it is re-dyed with a color slightly different. Mr. Ives exhibited eight or ten of these prepared tricolor slides on the screen but all, with the exception of three, were not sharp owing, it is supposed, to a slight refraction of the light in passing through so many films. The pictures that were the best as regards sharpness were a flower study of a bright red geranium, a fruit study of cherries and strawberries and a box of Huyler's candies. In a few landscapes the sky was abnormally blue. An excellent illustration of the difference between the old wet plate and the tricolor process was shown in a picture of a noted pool in the Yellowstone region, the water and bottom of the pool have a peculiar color. The first by the wet plate process was almost blank, the water reflecting the light. The second, taken on an ordinary orthochromatic plate showed traces of the bottom of the pool under the water, while the third, a tricolor slide brought out with great distinctness the contour of the bottom of the pool and the peculiar color reflection of the sky. Mr. Ives thought the tricolored slides could not be made a commercial success by the process described. Better results were to be had by the triple tricolor lantern and the superposition of the three images on the screen. Next to this the improved stereoscopic photo-chromosome which he had on exhibition, also illuminated by a Colt



are lamp, was the most perfect exemplification of the capabilities of the tricolor process that he was aware of. This requires that six duplicate pictures of one object be taken, three for each of the two stereoscopic lenses. The six pictures or transparencies arranged in pairs are united by cloth joints so they may readily conform to the step shaped supports on the instrument having the colored films in position to color each monochrome picture with the color corresponding to that which it originally represents, as impressed on the sensitized plate.

The respective images are blended by prisms and mirrors until they merge into one before each eyepiece, which magnifies slightly the merged colored image. The effect in looking into the instrument is most surprising, each portion of the image appears perfectly stereoscopic or solid, as for example one tempting picture, a box of candies was so very natural and striking that one was impressed to put the fingers into the box and pull out a candy. Mr. Ives remarked that it would not be long before special cameras and appurtenances would be made for taking these pictures regularly, and with the photo-chromoscope, simplified and reduced in cost would enable an amateur to take such views and see them reproduced in all the splendor of the colors of nature. He has named this kind of picture the chromogram, or a color record same as a telegram is the record of electricity.

At the close of the lecture the President, Mr. R. A. B. Dayton, tendered the thanks of the Society to Mr. Ives for his interesting lecture.

*Tuesday Evening, December 11th.*—In place of the regular monthly meeting set down for this date, Mr. Ernest Edwards read a paper on photogravure processes, demonstrating before the audience how the tricolor photogravure prints, resembling the colors of nature, are made. Sample prints were made on a machine brought to the society rooms for that purpose. Mr. Edwards' remarks were very understandable, and his demonstration practically made clear to everybody the simplicity, advantages and value of the tricolor process.

*Thursday, December 13th.*—A special informal lecture on "The History and Progress of Photo-Mechanical Processes," by Prof. Charles F. Chandler, was given on this evening. Prof. Chandler showed a large number of specimens illustrating the results of various processes used in photo-mechanical printing, and explained very clearly their several merits and demerits. He had a most attentive audience, and was accorded a vote of thanks.

*Friday Evening, December 14th.*—A special exhibition of lantern slides, entitled, "In the Land of Shakespeare," was given by Prof. D. L. Elmendorf, in the hall of the American Institute, as the hall of the Society below was occupied by the exhibition of photo-mechanical prints. Prof. Elmendorf gave a most interesting talk, illustrated by his many beautiful colored slides, on the subject of Chester, its environs, Stratford-on-the-Avon, Old Kenilworth Castle and Warwick Castle. A large audience was in attendance, and at the close of the exhibition a unanimous vote of thanks was accorded him.

*Saturday, December 23d.*—Mr. Otis A. Poole, of Yokohama, and a member of the Photographic Society of Japan, repeated his interesting illustrated lecture entitled, "One Day in Yokohama," before a large audience. Many of the slides were made from his own negatives, and were colored artistically by Japanese artists. Mr. Poole repeated several of his wonderful stories about Japanese fish and had a number of new slides. Altogether it was a very enjoyable entertainment.

*Friday Evening, Dec. 28th.*—The regular monthly exhibition of lantern slides oc-

curred this evening and was presided over at the screen, by Mr. Wm. M. Murray. The slides shown consisted of a selection from the Providence and Baltimore clubs sets and American slides, recently returned from England. Providence being a new club in the Interchange, much interest was manifested in the work shown. The technical quality of the work of this club was very good, but there appeared to be a sameness in subjects that made their collection somewhat monotonous. A striking picture in the Baltimore set was of a live Florida alligator in his native jungle. The selected American slides fittingly terminated a very enjoyable and interesting exhibition.

**PHOTOGRAPHIC SOCIETY OF PHILADELPHIA.**—The stated meeting was held on the evening of December 12th, 1894, President Joseph H. Burroughs in the chair. The Board of Directors submitted a report, commenting severely on the slides of the Photographic Society of the North of France, and said in reference to the communication from the Boston Camera Club, asking leave to withdraw from the joint exhibition agreement that the Board had adopted a resolution granting the request and expressing the opinion that the action of the Boston Camera Club terminates the agreement. Notice of this action and of our view of the matter has been communicated to the Boston Camera Club and the Society of Amateur Photographers of New York.

Mr. F. S. Lewis read the following paper on

#### MECHANICAL DEVELOPMENT.

One of the first desires felt by those who take up photography to the extent of developing the negative as well as pressing the button, is that some way might be devised of holding back the development of the high lights while the details in the shadows are being built up. In developing one of two plans is usually followed. The one consists of mixing the developer in certain proportions and then using it for all plates indiscriminately, while the other plan is to manipulate the developer to suit the requirements of the particular plate being developed.

The first method is based on luck, and the results are good or bad according to whether the mixture happens to suit the plate and exposure or not. The usual directions regarding the latter mode of developing are that a weaker developer than normal shall be used as a base, and to it shall be added old developer or bromide to restrain, pyro or eikonogen to give strength and density, and an alkali to bring out detail, as it is found the character of the plate demands from its being either undertimed, just right, or overtimed.

The principal objection to this method, however, is that after a half-dozen plates have been developed, requiring varying additions of different chemicals to make up for different exposures, the product in the developing dish is like hotel hash—full of useful ingredients, but in what proportions no one but an analytical chemist can determine.

Without a doubt more plates are undertimed than overtimed, due to the fact that the shutter must be speeded to a quicker movement than that of the object taken. This is especially true of scenery when the wind gives motion to the foliage in the foreground, of large groups, and snap shots in general, especially those taken of children and babies. The light in rapid out-door portraiture, when weak enough to allow a natural expression about the eyes, is usually too weak to give much detail in the shadows. The matter is further complicated when a portion of the plate is over-exposed and another portion under-exposed.

When a plate is under-exposed, and less pyro and more alkali is added to bring out the detail, it frequently occurs that the details which show in the developing dish either partially or altogether disappear in the fixing bath, leaving only a slight trace on the film. This is due to the fact that the reduction made in the amount of pyro for the purpose of giving less density to the high lights causes an absence of real strength in the detail in the shadow. For more than a year I have found that much better results can be obtained in developing plates by adopting the following methods:

The exposed plates when taken from the holder are immersed in cold water in win-

ter and in ice water in summer, where they are allowed to remain for three or four minutes, until the film and glass are chilled. The developer is prepared on the basis of normal exposure, and if made from powders is mixed with ice water, or if in fluid form is submerged in a thin glass bottle or vessel in ice water, until it is much cooler than ordinarily used. When the plate is placed in the developer the action is restrained by the cold developer, so that in event of an over-exposed plate being immersed the same result is obtained as by the use of bromide or other restrainer. If the plate has received either a normal or under-exposure the high lights will first appear slowly, and the moment they begin to show the plate should be lifted horizontally out of the developer and allowed to rest on the two edges of the tray, so that the plate will be in a horizontal position, thus preventing the flow of the thin layer of developer in any direction, or, better still, in an empty tray with ribbed bottom. The plate should be allowed to rest in this position until the point is reached where it would otherwise begin to dry on the surface, when it should be immersed for a moment and again placed in the same position. This should be repeated until all the detail is developed, when the plate can be placed for a short time in the developer for a general increase in density. The only precaution necessary to be observed is to have sufficient developer in the tray to immediately cover the negative, which should be immersed by lowering it from one end, thereby allowing the developer to sweep over it. It is well to pass a swab of absorbent cotton over the face of the negative when in the developer to remove any air bubbles or foreign substance. By this method of manipulating the plate it is possible to force out the details of the shadows without making the high lights too dense. Attention has been called in the past to the value of exposing the plates to the air during the process of development, on account of the increased action of the developer, due to the oxygen of the air; but this will not explain the fact that under this process the high lights are restrained and the details in the shadows built up. When the plate is raised from the developing fluid there is immediately overlying all portions of the negative a very thin film of developer. Where the high lights underlie the developer a rapid chemical action is at once started, and the strength of the developer exhausted. Where shadows underlie the developer the action is slow, and the developer exerts its full strength on the slight impression made by the light. The entire plate is subject to the action of the developer, which is exhausted at different points, proportionately to the action of the light on such points, during the exposure of the negative in the camera. On this account it is only possible for the high lights to be affected to the extent of the energy in the developer immediately overlying such high light, while the shadows are practically subject to the continued action of the full strength of the developer.

If, for the sake of illustrating the method, it is admitted that the energy of the developer overlying the high lights is exhausted in say one-third of the time the plate is out of the developer, then the result is equivalent to giving the shadows three times the effect of the developer as compared with the high lights.

In developing plates over-exposed in some parts, and under-exposed in others, good negatives can be obtained by developing one part or the other to a normal condition, and after fixing and drying, coating the portion of the plate which is satisfactory with Carbutt's roxylene, and then reduce or intensify the balance of the plate, the coated portion being unaffected during the process. The roxylene can be applied around the edge of portion to be covered with camel-hair brush and balance covered by flowing the preparation. In instantaneous views of scenery it sometimes happens that the faces of those who may be introduced to give the picture life are too much on the brunette style to suit either the subject or the photographer. By coating all the plate except the faces they can be improved by intensification.

The natural tendency of keeping the plate so much in the air is, especially in summer, to raise the temperature, which decreases the crispness of the image. By keeping the developer cold this is corrected. A piece of pasteboard placed between the developing dish and a ruby lamp prevents any trouble from fog. Another advantage in this form of developing is that two plates can be developed at the same time with little difficulty, as one or the other of them can be kept out of the developer. Other parties who have tried this method have found it to work satisfactorily. In developing outdoor portraiture it prevents chalkiness in the high-lights, while trying to build up the details of the shadows, and gives a smoothness and roundness to the arms and face that it seems otherwise impossible to obtain. Another great advantage in this method is that the developer, except that its energy has been reduced, is the same when the last

plate is developed as when the first was put in, there being nothing added in the meantime to unsettle the proportions. By adopting this plan it is unnecessary to add either bromide or old developer as a restrainer.

In conclusion let me suggest, if any one has a doubt as to its efficacy, try it when again developing instantaneous exposures.

At the conclusion of his paper a vote of thanks was given to Mr. Lewis.

Mr. John C. Browne called attention to some sample prints upon a paper known as "Celerite," the black tones of which were much admired.

Mr. Frank H. Rosengarten exhibited a negative which had received thirteen successive exposures, through the failure of a mechanism of a magazine camera. Instead of the film being wholly darkened as he had expected, several of the successive images were discernible.

Mr. Edmund Stirling showed an ingenious lantern slide carrier made by Queen & Company, by which both the English and the American and French size slides were instantly centred with respect to the opening.

Mr. John Carbutt alluded to the annoyance of the square shaped English slide plates and said he was the first party in America to propose the size  $3\frac{1}{4} \times 4$ , a size he remarked which had become very popular here.

Mr. Frederick Sawyer showed a self regulating Colt electric lantern and Mr. W. H. Rau a hand fed regulating electric lamp made by A. T. Thompson, of Boston. Several of Mr. F. E. Ives' tricolor lantern slides and some by Mr. Charles R. Pancoast were shown. The meeting then adjourned.

On November 28th Mr. Charles R. Pancoast read the following paper to the society entitled.

**THE MECHANICAL PART OF LANTERN SLIDE MAKING.**—It may seem superfluous on my part to call your attention to so trivial a subject as the matting and mounting on lantern slides, and my excuse must be that while for many any explanations would be out of place, yet there are some to whom a word of advice will not be unwelcome. I wish to call your attention particularly to the purely mechanical part of the work. In this I include the various adjustments of the camera, negative and plate holders, the making of the mats, and binding. It is an absolute rule that the centre of the picture on the slide *must* coincide with the centre of the glass, no matter what may be the shape of the mat opening. The reason for this is, that to secure the best definition in the lantern the centre of the slide must be in the optical axis of the instrument, all lanterns being made and adjusted so that the centre of the slide carrier is coincident with this axis. Some imagine that if the opening in the mat is anywhere on the slide it will suffice, trusting to the lantern operator, by an almost impossible adjustment, to rectify the error. Thus it is that we often see a picture projected on one corner of the screen, or possibly with a portion cut off, and all more or less out of form—a disgrace to any exhibition. All this may be overcome by care and attention. In providing a copying camera, or other equally convenient apparatus with which to make slides, the operator should look to the various adjustments needed. First of all, the focusing screen and the plate holder must register absolutely, otherwise sharp slides are an impossibility. Focusing should be done with a magnifier, and the slide must be just as sharp as a lens will make it. Second, there should be two movements to the carrier holding the negative—one a vertical and the other a horizontal; where such are not provided, the results may be obtained by mounting the lens on a double-sliding front board for convenience in manipulation; this latter plan is preferable. Without these adjustments it is impossible to properly centre a slide. Now find the exact centre of the sensitive plate as it is carried in the plate holder and transfer that point to the ground glass focusing screen. From this centre lay out accurately the various shapes of mat openings, drawing the lines carefully on the ground glass with a lead pencil. It will thus be seen that, if the work is carefully done, an image focused on the ground glass within the lines marked will occupy the exact centre of the sensitive plate. With these lines it is very easy to adjust the image by means of the vertical and horizontal movements of the negative carrier, so that the negative, or any part of

it, may be brought to the required mat opening and be absolutely centered on the plate. I have dwelt at length on this subject, for it is the keynote of accurate slide making, and, while adding to the beauty of the picture, renders its projection in the lantern a matter of certainty. Now as to mats. The usual form of mat, made of black enamelled paper with gilt lines, has been sanctioned by usage for so long a time that to break away may seem radical; but progressive ideas are always in order. To my mind, the ideal mat is made of heavy paper, white on one side and black on the other. On the white side (which is always placed next the condenser in the lantern) is written or printed the title and any other data which may be desired; also the maker's name; and in the lower left-hand corner a "thumb-mark," to denote the proper position to place in the lantern carrier. Over this mat is placed the cover glass, thus protecting the writing and avoiding the necessity of an outside label. To the lantern operator the readiness with which the white side may be distinguished, and the ease with which the titles may be read, when necessary, in the dim light of a darkened room, are great sources of satisfaction. From the lanternist's standpoint all pictures should be uniform in size and shape, so that they will "dissolve into" each other perfectly. To do this the regulation mat has an opening very nearly square, with rounded corners. This is all very well, but from an artistic standpoint square pictures are objectionable, as not giving sufficient scope to good composition, and as all plates used are more or less oblong, it seems somewhat incongruous to make an oblong picture in the camera and cut a square out of it for the lantern. In my opinion, therefore, it is far more desirable that the artistic side be given the preference over time-honored custom, and that we adopt mat openings which best harmonize with the subject of the picture, whether square, oblong, or round. With this end in view I have, in addition to the usual square form, which is oftentimes very desirable, three other forms—one for horizontal, one for upright, and one for circular pictures, the openings in the former being an exact reduction of the proportions of a  $6\frac{1}{2} \times 8\frac{1}{2}$  plate. To cut these openings I use a set of steel guides, made exactly  $3\frac{1}{2} \times 4$  on the outside, the inside openings being as first described. By placing one of these guides on the mat on a piece of glass, and using a "Robinson trimmer," the opening can be cut out with great ease and accuracy.

A few words about cover glasses. The desire for a very transparent thin glass has caused many to use a French or German make, which, at first sight, seems admirably adapted to the purpose; but unfortunately there is something in its manufacture whereby the alkali exudes and condenses on the surface in peculiar arborescent markings. This incrustation on the under side of the cover is frequently so great as to almost obscure the picture. This may be overcome by varnishing the cover; but better yet, use a hard English crown glass like Chance's "B. P. C." I have found ordinary negative glass answer perfectly, care being taken to select thin lights, free from bubbles and scratches. Where old negatives are used for this purpose the side on which the film has been should be marked and put on the outside. Over a year ago I mounted two plates—in the manner of a slide—one of German glass and one of English crown. Both were chemically cleaned before being put together, and in the time elapsed the incrustation on the German glass is very marked, while the other is perfectly clean.

*CALIFORNIA CAMERA CLUB, Nov. 28th*—A lecture and demonstration on "The Shutter," by Mr. O. V. Lange, was given under the direction of the committee on Classes and Demonstrations.

*December 4th*—The regular monthly meeting was held and slides were tested.

*December 8th*—The club had a social meeting styled "At Home," which is reported to have been very enjoyable.

*December 12th*—The lecture and demonstration on "Shutters" was continued by Mr. O. V. Lange.

*December 21st*—The club aided a charity for poor children called the "Little Jim" Fund, by giving a fine exhibition of lantern slides in the Metropolitan Temple. The large hall was filled to overflowing and a handsome sum was realized for the Fund. The same views are to be shown gratuitously in the children's hospital later on.

*December 26th*—Dr. W. E. Goodrum gave a demonstration on Pyro Development.

*December 28th*—Mrs. W. L. Gans lectured on the war between Japan and China. It was the 55th illustrated lecture, held in the Metropolitan Temple.

**PHOTOGRAPHIC SOCIETY OF JAPAN.**—An ordinary meeting of the above-mentioned Society was held at the rooms of the Geographical Society (Chigaku-kyokai), Nichikonyacho, Tokyo, on Friday, November 9th, at 5 p. m., Mr. C. D. West, M. A., in the chair.

The minutes of the last regular meeting having been read and approved, the results of printing on Ilford "Printing Out Paper" were shown. The texture of the paper and the tint of the prints (commonly called by photographers "tone") were generally admired. The prints had been taken directly from the printing frames and placed dry in a mixture of a solution of hyposulphite of soda and chloride of gold, with chalk to insure neutrality. Dr. E. Divers, F. R. S., in answer to a question, stated that he considered there was no danger of "sulphur toning" in using such a bath.

Mr. K. Ogawa showed a set of prints from negatives by Viscount Okabe, Vice-President of the Society, of views at Miyajima, and at Takao and Hozogawa, near Kyoto. Great artistic taste, had, it was considered, been exhibited in selecting the subjects and the point of view. The Chairman showed an album containing many prints, the result of work during the past summer with a 5x4 hand camera. The prints were of a fine black tint, on matt-surface paper. It was explained that they were silver prints, toned with platinum; in fact, prints by Lionel Clark's process. Mr. B. Konishi presented to the Society samples of "tabloids" by Messrs. Burroughs, Welcome & Co., of London, the brands being different from those which had been sent directly to the Society by that firm.

Messrs. W. K. Burton and M. Kondo showed prints by the Kalotype process. The tints were as good as those of platinotype, and excellent prints could be got from thin negatives. Mr. Burton expressed the opinion that, with the present enormously increased price of platinum the Kalotype process seemed a likely rival to the platinotype, and stated that, with the permission of the Society, Mr. Kondo and he would give a demonstration of the process at the regular meeting.

Two prints which had been sent to the Society by Mr. Marcus H. Rogers were shown. They were on American "Aristotype" paper, a paper coated with a gelatino-chloride, or colodio-chloride emulsion, and showed the very wide range of tones that could be got on that paper.

The proceedings ended with a vote of thanks to the chairman. At a committee meeting held on the same day, it was decided that an out-door meeting should, if possible, be held towards the end of the present month, and that there should be a lantern exhibition in Yokohama next month.

**THE DEPARTMENT OF PHOTOGRAPHY OF THE BROOKLYN INSTITUTE.**—On Friday evening, Nov. 30th, Mr. Abraham Bogardus, the veteran photographer of New York, gave the Department an amusing and instructive description of some of his experience during "Forty Years Behind the Camera."

Mr. Otis A. Poole, of Yokohama, favored us on Tuesday evening, Dec. 4th. His lecture on Japan, illustrated by over 150 beautifully colored lantern photographs, attracted such a large audience, that many people had to be turned away from the doors. It was therefore decided to repeat the lecture on Friday, Dec. 28th, at Association Hall, Fulton and Bond Streets. At the Thursday evening meeting on Dec. 6th, Mr. Wundram exhibited his set of lantern photographs.

Mr. N. B. Sizer interested all with a talk upon "Our Enemy, the Microbe," on Thursday, Dec. 13th.

The meeting on Dec. 20th, was devoted to a lantern photograph exhibition by the members. For January we are promised a lecture by Prof. Hallock, of Columbia College, on Photographic Optics, and later in the month Mr. Geo. G. Rockwood, of New York, will tell us about "Sunlight and Shadow or Photography up to Date."

**ORANGE CAMERA CLUB.**—Regular meeting held Dec. 5th, at which the club voted to discontinue the "open" meetings heretofore held on the 20th of each month and to substitute special meetings for exhibition purposes to which friends of the club may be invited. This arrangement will give *two* regular and *one* special meeting each month. The interest in the club is shown by a larger average attendance of the members at recent meetings.

Important action was taken by the club in a resolution passed to retire from the Interchange of the American League and to prepare a set of slides for exchange with such Photographic Societies as may be outside of other Interchanges and clubs having sets of slides not associated with the Interchanges, are invited to exchange with the Orange Club. Slides from Baltimore and Providence were shown, the Providence Club, new to the Interchange this season, making a very good showing.

#### DIRECTIONS FOR WORKING THE CARBON PROCESS.

Mr. E. W. Newcomb t us describes his method :

1st. Sensitizing the night before printing. The paper is merely soaked five minutes in sensitizer (composed of water 100 oz., Bichromate of potash 3 oz.) withdrawn, squeezed on a plate to expel surplus sensitizer, stripped off and hung by clips to dry in a darkened room where it will dry in three or four hours.

2d. Printing. Although the image is not seen during the printing we have an easy scheme to tell how long to print it i. e., upon a small glass, size 4x5, paste a strip of tissue paper one inch wide and the length of the glass. Over this from lower end paste a similar strip a half inch shorter, and so on until a regularly graduated series of tints each one darker than its predecessor is produced (number the tints). Now take strips of any sensitized paper—albumen, aristo, blue or even paper dipped in the bichromate solution and put one under the negative to be printed, the other in the tinter and sun them. When the print is the required depth, not over printed at all as a carbon loses nothing in subsequent operations, note the last tint number that printed in the tinter and mark that number on the negative. This tint will be found right in sun or shade, rain or shine, in future for the actual carbon print if the sensitizer is always kept the same strength.

After noting the time required to tint several negatives one can readily estimate how many tints to print any negative, the comparison becomes very easy and even though the carbon does not print out the *tinter does*, the result will be perfect, and there will be no guess work about carbon printing. Some method of comparison must be had and we devised this as the cheapest and most simple.

When printed, the carbon is thrown in a tray of water with a piece of either single transfer paper or flexible support according as one likes reversed or non-reversed prints, and when both papers are soaked to limpness they are squeezed into contact, placed under light pressure a few minutes and then put in a tray of warm water. This loosens the back of the carbon tissue which is easily removed from the transfer paper or support as the case may be, leaving all the pigment on the paper. Carbon tissue is colored earth mixed in gelatine and spread on paper; by soaking it in bichromate of potash it becomes insoluble when acted upon by light, hence when the backing is stripped off as above described, all that remains to do is to rock it, changing the water now and then until all the soluble pigment is washed away leaving the whites clear. The print is then done if it is by single transfer or is squeezed on to sticky paper called double transfer if a non-reversed image is wanted and peeled from the temporary support when dry and mounted.

## Correspondence.

### ARTISTIC COMPETITION PRIZE.

*To the Editors of THE AMERICAN AMATEUR PHOTOGRAPHER :*

SIRS—The beautiful silver cup which you have sent me, is received, and I beg you will accept my sincere thanks for it.

The success of my work in this contest has surprised me very much, and to have it passed upon by such masters as Messrs. Davison and Robinson is indeed a pleasure, which I am sure will induce me to better effort if not better work.

PHILADELPHIA, Dec. 12, 1894.

Yours very truly,

ALFRED CLEMENTS.

*Editors of THE AMERICAN AMATEUR PHOTOGRAPHER:*

DEAR SIRS—Upon my return from the South to-day I found awaiting me my prize awarded me by Messrs. George Davison and H. P. Robinson in the championship competition. I am highly gratified and thoroughly satisfied. I must also tender my thanks for the care and taste shown in the selection of the prizes. Very truly yours, CLARENCE B. MOORE.

PHILADELPHIA, PA., Dec. 19, 1894.

## What is an Editor to Do?

*To the Editors of THE AMERICAN AMATEUR PHOTOGRAPHER:*

SIRS—I send you by this mail some photos for criticism. If you think them good enough for pictures I will put them in platinotype and send you copies of any you may wish to put in your album. I think the critical department you mention on page 421 will be a valuable addition to your magazine, especially to those who desire impartial criticism instead of *friends'* favorable remarks.

I enclose postage for return of prints.

*To the Editors of THE AMERICAN AMATEUR PHOTOGRAPHER:*

SIRS—I am pleased to note that another gentleman has taken the same ground with me, on the subject of criticism.

I also note your remarks in reply to his letter in the December number of your magazine. Inasmuch as you call the prints sent by me "Pictorially valueless," and that expression is used by you in reply to him, with the additional word "things" applied to them, I must, in



justice to myself, call your attention to the fact that I do not profess to be an artist, but simply an amateur photographer anxious to do better, and for that reason sent the prints to you for advice, and not for a bluff "Pictorially valueless" criticism.

I have submitted the same lot to prominent artists with the brush and camera in this city, Boston, Worcester, and your own city. These gentlemen have been pleased to call them, "Very good," and pointing out wherein they could have been improved, and one editor of a magazine, in your city, asked permission to reproduce one of the "valueless things." This only goes to show that what pleases one may not another.

We are all more or less human, and a kindly criticism is much better than a "bluff" No good.

Wishing you a Merry Christmas and a Happy New Year, I am, as ever, an admirer of your magazine.

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The above letters were received respectively on October 8th, and December 22d, from the same gentleman, whose name we withhold. We publish them so as to let our readers judge of the difficulty in being *candid* without causing adverse comment. We congratulate our friend in having met with the approval of so many artists and even with an editor. The latter's having accepted a photograph for reproduction does not make the same a picture by any means, nor does it prove that the photograph has any merit as such; we need only open most of the photographic magazines to see what editors generally consider good.

And as for artists' opinions, our experience has taught us that few of them will express any opinion but "very good" upon most photographs shown them. On the quiet they very often think the same abominations. Our friend *expressly* wished a candid opinion and although we might have used more florid language than a bluff pictorially valueless, we still claim that it is better than the general insincere "very good." It is but a few days ago that we had occasion to overhear an artist of national reputation remark, upon being asked to be a judge of a photographic competition and refusing the honor, "You can't say what you mean, anyway." This latter remark was addressed in an undertone to a third party standing near by.

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## Photographs Received.

Mr. Schouler, of Blackington, Mass., sends us five landscapes printed on various brands of paper. The matt surface aristo print "End of the Snowstorm" is quite true in values, while the bromide print from the same negative is decidedly bad. It lacks the delicacy natural to the subject. The black color of this print is preferable to the gray brown of the aristo, especially for this subject. "A Sunset in Berkshire" lacks gradation, the tone is wrong, the bridge spoils an otherwise fairly well composed picture. "Moonlight on the Hoosick" is a decided failure, moonlight landscapes are not black batches of trees and grass, with bright skies. "A November Day" is too patchy and hard, the fore and back grounds are of the same values. Mr. Schouler is nevertheless striving to make pictures and not merely photographs and that is highly commendable.

Miss C. M. Kast, Mechanicsville, Pa., submits four prints for criticism. There is

absolutely nothing to criticise, as the lot are of the most ordinary type of 4x5's, such as one sees turned out by the million every year.

Miss Matthews, of Kentucky, sends us two photographs, red aristotypes, "A Visit to Uncle Amos" and "Drink." The work, though showing some thought, is commonplace and trivial. Miss Matthews had better try some simpler subjects before attempting genre pictures of this class, and we feel certain that the results will be much more satisfactory.

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## Books Received.

ANNUAL REPORT AND LIST OF MEMBERS OF THE PHOTOGRAPHIC SOCIETY OF JAPAN.—The report is somewhat novel in being printed in English and Japanese. There was a good balance on hand. The society appears to be in a flourishing condition and shows that the guiding hand of Prof. W. K. Burton has had a good effect.

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## Editorial Table.

THE SERAPH LENS.—Mr. G. Gennert, who handles this lens adapted, as he thought, because of its cheapness, for only slow work, says: "Judge our surprise upon receiving an order to-day (Dec. 14) from Mr. C. M. Hunt, of San Francisco, Cal., ordering a 5x7 detective camera and asking to have his 5x7 Seraph combination fitted with the quickest shutter we could possibly make.

Mr. Hunt enclosed us a picture made instantaneously with the Seraph lens combination of a young man jumping over a tennis net, which is one of the best instantaneous pictures we have ever seen. To use his own words, he says: 'I send you a proof of a negative I made with the 4x5 combination of the Seraph, which shows that for rapid work the Seraph is quick enough provided the shutter is fast enough.' This is an endorsement, which, as it comes entirely unsolicited, we esteem highly valuable. From this day on we shall advertise the Seraph lens combination for instantaneous work also."

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## How to Clean Lenses.

THE September number of *Popular Astronomy* contains a paper on this subject by one of the first of authorities, Mr. J. A. Brashear, one of the leading telescope makers living. It is his 18 inch objective which is making the observations of Mars now going on in the observatory at Flagstaff. Mr. Brashear disposes of the common advice that on "no account should two glasses forming an objective be separated or taken apart by an amateur." Any one may venture upon taking an objective apart and cleaning it, provided he will only do it carefully.

In the first place, Mr. Brashear says, "do not use either fine chamois skin, tissue paper, or an old silk handkerchief, or any other such material as is usually advised. Use cheese cloth. It is not the wiping material, though, that is apt to do the mischief, but the fine dust particles, which may be silicious and become attached to the glass. This is the way to begin on the objective:

Take a wooden bowl, cleaned with soap and water, then half fill it with clean water of about the same temperature as the glass, and put in a teaspoonful of ammonia in half a pail of water. First wash a piece of cheese cloth thoroughly with soap and

water, and rinse and clean. Then place it in the bowl or pail, so that the lens won't slip. Never use the same piece of cheese cloth twice.

Mr. Brashear says that when the lens has been dusted and placed in the water he prefers to rub it with the palms of his cleaned hands, although cheese cloth is good. There seems to be absolutely no danger of scratching it when plenty of water is used. When thoroughly washed, take the glass out, lay it on a bundle of cheese cloth, and use several pieces of the same, which have been previously washed clean and dried, and dry it. Don't let it drain dry. Take up all the moisture with the cloth. Vigorous rubbing will do no harm if the surfaces have no abrading material. "I have yet," says Mr. Brashear, "to injure a glass cleaned in this way."

An objective can be cleaned without taking it out of its cell. First dust off the particles, then use the cheese cloth with soap and water. Go over the surface gently with one piece of cloth, and throw it away and take another; then a third one. When the glass is clean take a piece of dry cloth and dry it.

Of course photographic lenses can be cleaned in the same way.

#### THE BLUE PRINT PROCESS.

Select a smooth paper, with hard surface. Heavy unruled writing paper is good.

Two solutions.

A. Red prussiate of potash, . . . . .	240 grains.
Water, . . . . .	4 ounces.
B. Citrate of iron and ammonia, . . . . .	360 grains.
Water, . . . . .	4 ounces.

For use, equal parts.

To coat the paper it should first be dampened and placed between blotters until limp.

Print till shadows are bronzed or mouse color. After printing, place in a tray of water for a few seconds—merely enough to thoroughly wet the surface and make the paper limp—then transfer to a solution of water and ammonia—one drop of ammonia to the ounce of water. In this bath the print will bleach and turn a peculiar purple. If over-printed the print may be reduced in the bath. Generally preferable to over-print slightly.

When the print is sufficiently reduced, transfer to tray containing:

Water, . . . . .	8 ounces.
Monsell's salts, . . . . .	½ ounce.

The color will immediately change from purple to blue. About two minutes' toning will result in a beautiful blue, very much resembling Cantor prints. The whites may be perfectly cleared in the ammonia bath. For old paper the printing should be carried until everything but the high lights are bronzed. Reduce in the ammonia bath until the blue tinge of the white is removed. Preferable to transfer at once from ammonia to toning bath without washing. After the print is toned the desired color, it should be washed only from two to five minutes, and by a direct stream of water on the face of the print. If the reduction is found not sufficient, after the print is toned, it may be turned into the ammonia bath and toned. Monsell's salt is chemically known as basic ferric sulphate or sulphate of iron, and is very cheap. Other iron salts may be used with varying results—nitrate and ferric sulphate.

—H. H. BUCKWALTER, in *Canadian Photo Journal*.

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*"Index Rerum Photographic." by Dr. John H. Janeway, U. S. A., continued from page 592, vol. vi*

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addition of a little lime water or, better still, milk of lime will prevent the formation of the scum. Be careful not to add too much, just enough to render the water soft.

**MEASLES**—A mottled effect sometimes appears on the paper after coming from the printing frame or from the clearing bath, which is known as measles, and is generally caused by the paper being insufficiently silvered, but sometimes arises from an inferior quality of the paper or improperly sized, which imbibes the silver unevenly. If from the latter cause, the mottled appearance will be evenly distributed all over. When produced in the clearing bath, they are due to imperfect clearing and non-solution of the hyposulphite of silver. These spots then turn yellow on keeping.

**MEASURES**—Standards of dimensions. Instruments by which size and quantity are measured.

**MEASURING GLASSES**—Commonly called graduates, from being marked at different points representing the quantity of fluid at that point. They range from minims through drachms, ounces to  $\frac{1}{4}$  gallon—64 ounces apothecaries measure. They are also graded according to the metric system. Although these measures should be absolutely correct, unfortunately they are not so, owing to carelessness in their manufacture. Neither are two absolutely equal. Take a 16-ounce graduate and measure out at once 16 ounces of water, pour it into a bottle, then take a 1-ounce graduate and measure off successive ounces from the portion placed in the bottle until the whole is consumed, or reverse the process and note the result. Many mistakes are made by improperly holding the graduate and reading from the top, and not from the central or lower portion of the curve which the liquid takes. For by capillary attraction the liquid is drawn up the sides of the glass, and the whole surface has a meniscus curve. The graduate should be held at the level of the eye and perfectly perpendicular to obtain a reliable reading.

**MEASURING SPEED OF SHUTTER WITH PENDULUM**—A rough and ready way of estimating the speed of shutters by pendulum vibrations can be devised by any one having access to one of the common metronomes used by music teachers. They are arranged to vibrate in definite proportions of a minute, and the sweep is sufficient to enable one to estimate with considerable accuracy the speed of a tolerably rapid shutter. For example: If the top of the arm traverses

the arc (of say  $3\frac{1}{2}$  inches) in  $\frac{1}{2}$  second, a movement of  $\frac{1}{8}$  would indicate  $\frac{1}{4}$  second. A background of cardboard, with an arc of same radius divided into 8 inches, would enable one to estimate the distance traversed without measuring.

**MECHANICAL PRINTING**—See Photo-Mechanical.

**MEDALLION PRINTING**—To secure prints by this method Gihon's "cut-outs" are used, which consist first of a mask of any form, but generally with an oval opening in the center, which is placed over the negative margin or border during printing of the figure, then the figure is covered with the piece corresponding to the oval cut out, and the border of the print is "flashed" in the sun more or less, according to taste. There should always be a contrast between the figure part and the border, the latter being the much lighter of the two.

**MEGASCOPE**—A modification of the solar microscope, for the purpose of enlarging. The ordinary method of enlarging consists of projecting the image of a negative plate by means of the lens of a megascope onto sensitized paper when it is cleared. The image enlarged like that of the magic lantern slide is faithfully reproduced on the paper. Though the theory of this operation is simple enough, its practice is somewhat difficult, and requires a very perfect instrument.

**MEGATYPE**—A trade name given to collodion transfer pictures.

**MENISCUS**—See Lens.

**MERCURY**— $\text{Hg}$ —200—The symbol  $\text{Hg}$  is derived from the name hydrargyrum, given to it by Pliny; is commonly called quicksilver. It is found combined with sulphur as *cinnabar*—mercuric sulphide—in the famous mines of Almaden, Spain, in India and California. The commercial article usually contains small quantities of iron, lead or zinc, and can be freed from these by distillation or treatment with dilute nitric acid. Pure mercury is a silvery white liquid metal, freezing at  $-103^{\circ}$  F. and boiling at  $675^{\circ}$  F. It combines with many other metals, forming alloys called amalgams, volatilizes at all temperatures, but the rapidity of volatilization increases as the temperature rises. It is on this fact that its use as a developer in daguerreotype process depends. The exposed silver plate is placed over a dish of warm mercury and the latter metal combines with those parts of the plate which have been affected by light.

**MERCURY BICHLORIDE**— $\text{Hg Cl}_2$ —271—Known as mercuric chloride or corrosive sublimate, usually prepared by heating a mixture of mercuric sulphate and common salt. Its colorless crystals are soluble in 15 parts of cold or 2 parts of hot water. The addition of a little ammonium chloride to the cold water increases its power to dissolve the mercurial salt. Soluble in alcohol and ether, and is a violent corrosive poison. It is used in photography for intensifying. The thin negative is soaked in a saturated solution until it turns white—owing to the formation of calomel,  $\text{Hg}_2\text{Cl}_2$ —and silver chloride, and then in a weak solution of ammonia, sulphite of soda and other salts.

**MERCURY BINIODIDE**— $\text{HgI}_2$ —454—Formed when solutions of potassium iodide and mercuric chloride are mixed together. It appears first as a yellowish precipitate, but this rapidly turns to scarlet. It is soluble in an excess of either of the solutions from which it is formed, especially in an excess of potassium iodide. Mercuric iodide followed by ammonia or sulphite of soda forms an excellent intensifier for gelatine negatives.

**MERCURY MONOXIDE**— $\text{Hg O}$ —216, also called mercuric oxide—red oxide—red precipitate. Commercially prepared by heating a mixture of mercury and mercuric nitrate—a bright red crystalline powder—a poisonous substance slightly soluble in water. By strong heat it is broken up into mercury and oxygen.

**MERCURY SUBCHLORIDE**— $\text{Hg}_2\text{Cl}_2$ —471—Mercury subchloride or mercurous chloride is the *calomel* of druggists. Prepared by heating mercury with mercuric bichloride. It is insoluble in water, alcohol, and cold dilute acids. When exposed to light it turns gray, owing to the separation of metallic mercury.

**META-BISULPHITE OF POTASSIUM**— $\text{K}_2\text{S}_2\text{O}_5$ —Prepared by supersaturating a rather strong solution of carbonate of potash with sulphurous acid and precipitating with absolute alcohol. A white acicular mass of crystals is obtained which must be collected on a filter and washed with absolute alcohol. Has an unpleasant sulphurous taste and smell, and slowly evolves sulphurous acid in the air. Strongly recommended by some as a preservative for pyro in solution. Doubtless this slow evolution of sulphurous acid is the active agent in the preservation of the pyro.

**METALLIC SPOTS** - There is no remedy for these. They are caused principally by metallic substances, iron, etc., being ground up accidentally with the rags in the manufacture of the paper, or other local causes.

**METHOD OF HELIOGRAVURE, A**—Take a walnut board of the size of the photographic plate, fasten to this a thin sheet of copper, and have this made perfectly plane. After having cleaned it with ether, flow it in the same manner as a wet plate is flowed with collodion; with bitumen of Judea, 10 grammes; chloroform sufficient to dissolve. This operation is conducted in the dark room. Allow the plate to dry, and then expose ten to fifteen minutes in a printing frame, under a negative or, preferably, a positive. After this develop in a dark room with rectified sulphuric ether, and wash with water slightly alcoholized. There results a plate which can be printed from like a lithographic stone, with a simple ink roller, after having first moistened the plate with pure water. A sheet of white paper pressed on this plate gives a very good print, and one very simply obtained.

**METHYLATED ETHER**—See Ether.

**METHYLATED SPIRITS**—See Alcohol.

**METEOROLOGICAL PHOTOGRAPHY**—Is beginning to claim the attention of scientists. The "sea of dawn" of the early morning undergoes interesting changes through the action of currents set in motion by the sun. Fine pictures, illustrating the characteristics of mountain clouds at the different hours of the day, have excited much attention.

**METRIC SYSTEM**—See Decimal System.

**MICRO-PHOTOGRAPHS**—"When doctors disagree, who shall decide?"

This term is used to denote an enlarged representation of a microscopic object, and also the reproduction of positives of a very minute size, which require the use of a simple microscope, or magnifying glass, to examine. It now is generally accepted that photomicrographs is the proper term to be used denoting photographs produced in the camera with the aid of the microscope, and that micro-photographs should refer to those minute pictures fixed behind a very small magnifying glass in the handle of some little fancy article. They are comparatively easy to produce, but only by the collodion process, with reduction carried out to a minute degree.

*To be continued.*





FIRST PRIZE  
"AMERICAN ANATOMY PHOTOGRAPHS"  
CHAMBERLAIN COMPETITION.

## "A STRUGGLE FOR EXISTENCE."

BY ALFRED VANDERBILT  
"MR. G. DR. HALLMAN"

# THE AMERICAN AMATEUR PHOTOGRAPHER.

Vol. VII.

FEBRUARY, 1895.

No. 2.

## American Amateur Photographer Special Prize Competition, 1894.

### NOTES ON SOME OF THE PHOTOGRAPHS.

BY GEORGE DAVISON.

IF these notes are published, I hope that the exhibitors criticised will understand that it is only a personal opinion, candidly given without any acrimony and with the view of assisting the workers.

"*Dr. Malaria.*" The pictures with this designation all show considerable taste in selection and treatment throughout. One or two are strong subjects and others are pretty and delicate and generally good in tone, only two or three being somewhat commonplace.

No. 1 is a striking effect in some respects, but is wanting in concentration, and is scattered and spotty as a subject. *See page 50.*

3. A pretty rural subject, but somewhat trivial in its interest. Like Nos. 4 and 5, this is sure to be popular, but the want of strength

and concentration or original and uncommon *feeling* is no doubt as well appreciated by the exhibitor as by his critic. From the character of some of his other work it is quite certain he will not be satisfied for long with these selections. Eight is rather a large number for one competition. In most cases the quality would have been enhanced by stricter limits.

6. The quality and effect gained here are chiefly from the color and the mounting. *See page 51.*

7. A fair picture out of simple materials. The author has been

No. 3.

"*Dr. Malaria.*"

"THERE IS NO PLACE LIKE HOME."

quick to see the slightly fantastic character of the trees. Although more characteristic examples of wind-blown trees and quaint forms might have been selected, the subject shows artistic observation and treatment. See p. 58

8. This is distinctly the most effective of the set. There is unity and simplicity, with strength. There is a distinct feeling or sentiment of a well-known scene—wind-swept sand and grasses hard by a sea shore. Under a more distinctive or uncommon lighting the subject might have been given with even greater force. As regards particulars,

Copyrighted.

"SOLID COMFORT."

By "Ontario."

those who have observed and worked much on this kind of landscape will be quick to see the falseness of tone. In nature, the sea beyond was doubtless darker in its blue against the sand hills. In the print it is almost as light as the sand, and the tiny line of breakers should have been lighter still. The grass on the top of the hillocks is, judging

from many similar scenes I well know on the Norfolk coast, rendered too dark. Still the effect is the wind-swept sand and grass, and this has been selected with knowledge. The sky is almost too restful to harmonize with or carry out the feeling or character of the picture.

"*Progressive.*" 1. "Landing of Boats." This is a selection replete with life and interest, but the subject is only fairly well arranged on the plate or print. Something better will certainly be made out of this negative by "*Progressive.*" In details, the weakness at the top left-hand corner is a defect. The mounting upon the card comes harsh and in bad taste. The general effect, however, if a little wanting in vigor and go, is true and good. See page 55.

3. "An Impression." Just so—a nice, delicate, effective and suggestive little bit—snow and light young trees. But the mounting does not help it. See page 58.

5. "Early Morning." This is not a success. The effect of slanting sunbeams is not badly caught, but the picture as presented is not very convincing. The figures are not good, nor do the surroundings appear to come in well.

Copyrighted.

"THE SOLO."

By "Onia'so."

7. "A Dutch Village Street." The mark has been missed. Tame and pointless. No effect.

"*Iquitos.*" 1. "Gimme a Light." There is considerable animation and go in the figures and a peculiar effect of sunlight given by the brightness at back. The background, it is true, might almost be taken for one of those jolly cracked plaster walls, but any way the interest

No. 1.

"MORNING ON SUFFOLK BROADS."

By "Dr. Malaria."

centers on the figures and the incident which are simply shown, vigorous and natural as a whole, a rare quality in these subjects. See page 63.

2. "The Never-Ending Fen." Good, but there is want of distance and perspective. The weight, size and strength of the clouds seem to overbalance the whole motive. A technical defect is the weakness down the left side of the print.

3 "A Veteran." The lighting is bold and striking, but is not very distinctive of its kind, and one that is now become hackneyed. The

No. 2.

"THE NEVER-ENDING FEN."

By "Iguisee."

photograph shows "*the picturesque type*" rather than *an artistic treatment*.

4. "A Veteran's Tale—The Assault." The attitude and expression do not carry out the title. There is too much solemnity rather than ardor and the action is stiff, stagey and unnatural. It is, however, an excellent print, with considerable interest, and shows a good effort. See page 59.

"Ontario." "The Connoisseur." The expression on the face of the model is decidedly good and has been well taken advantage of by the photographer. There is *art*, undoubtedly, in all these subjects, but also

too much *artificiality* to please me personally. They cannot fail to be popular, but would, in my opinion, gain much in concentration and sentiment by judicious restraint and suppression. The artificiality is seen, also, in the character and placing of the accessories. The jar at foot is more in evidence than even the *Kernozet's* face and expression. *See page 61.*

"The Solo." This is not so good as the former. It is poor in tone. The high lights come unnaturally harsh against sudden blacks. There is very little modelling in the hands. *See page 51.*

"To-morrow will be Friday." The figure again is excellent, but the whole subject fails of full effect by faulty composition. The string of fish held up is lost to view by reason of bad selection of lighting and position. *See page 58.*

"Solid Comfort." The same remarks apply both complimentary and critical. There is artificiality in pose and the accessories are overdone. Some judicious subjugation in printing or treatment by focus would add considerably to the imaginative effect of these subjects. *See page 50.*

Copyrighted.

"THE VETERAN."

By "Iquitos."

Copyrighted.

By "Ontario."

"Fisherwoman and Child." The figures are out of tone with the surroundings. *See page 57.*

"Katherine Eaton." In these contributed pictures, the figures are stiff and the lighting is harsh and unnatural.

No. 8, "Across the Fields at Eventide," and No. 4, "Among the Daisies" are better than the rest, but, in the former, the poised jar looks unhappy and there is no appearance or suggestion of swing or movement in the figure.

"Albanian." *See page 66.* I am afraid one can hardly say anything in criticism of these. The models and subjects have not been suitable, the arrangement is bad as also the lighting. The printing and general treatment is not in good taste.

The worst, perhaps, is the portrait of Mr. Parsons, an example, if it may be said, without offence, of "how *not* to do it."

[NOTE.—It should be mentioned that the illustrations in connection with this article are made from the pictures sent to

No. 8.

By "Katherine Eaton."

"ACROSS THE FIELDS AT EVENTIDE."

our artistic prize competition last November, which the judges regarded as some of the best examples of artistic work included in the collection and serve to show the trend of work by American amateurs. It is the intention to have a similar competition next fall and it is hoped there will be a larger response, than appeared in the first. It has been a source of satisfaction to American amateurs that their pictures have been

Copyrighted

"COMING BOATS."

SECOND PRIZE.

By "Providence."

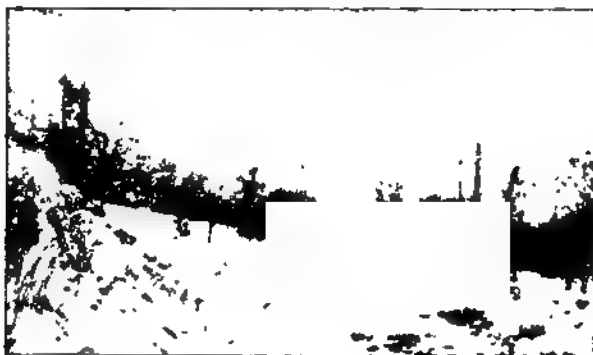




*Copyrighted.*

" FISHERWOMAN AND CHILD."

By "ONTARIO."



No. 2.

"AN IMPRESSION."

By "Progressive."

judged so fairly by Mr. Davison and Mr. Robinson, since the element of personal equation, so to speak, or personal acquaintance is eliminated. We are sure our readers will appreciate the treat we give them in reproducing so many of these pictures. As a key to the assumed names which were only those that the judges were aware of, we would say that "Dr. Malaria" means Alfred Clements, of Philadelphia, Pa.; "Iquitos" is Clarence B. Moore, also of Philadelphia, Pa.; "Progressive" is Alfred Stieglitz, of New York; "Ontario" is John C. Dumont, of Rochester, New York;

Copyrighted.

By "Ontario."

"TO MORROW'S FRIDAY."

"Katherine Eaton" is Emma J. Fitz, Boston, and "Albanian" is Geo. C. Baker, Albany. It may be mentioned that the picture on page 54 by Katherine Eaton (Miss Fitz), was one that attracted considerable attention at the recent exhibition of the Twenty-third Regiment in Brooklyn, but it was not awarded a medal. A picture like that on page 60, also by her, was the one that pleased the judges the best and received the medal. The picture of the veteran relating the tale of the assault by Iquitos (Clarence B. Moore), is a striking portrait study.—Eds.]

No. 1

"SENTINELS OF THE MARSH."

By "Dr. Malaria."

*Copyrighted.*

**"A VETERAN'S TALE.—THE ASSAULT."**

By "LOUTON."

## Beginners' Column.

### CHAPTER XVI.—BROMIDE PAPER CONTACT PRINTING.

BY JOHN CLARKE.

I HAVE not yet said anything of bromide paper, although for various purposes, and several reasons, it is a very valuable addition to the material of the beginner as well as of the experienced photographer. Without admitting the claim to permanence implied by the name, "Permanent Bromide Paper," given by the firm which popularized it, prints on it are doubtless at least as lasting as those by any other silver method, and for some subjects they are eminently suitable, rivalling indeed the most beautiful velvety-black platinotypes.

The great advantage possessed by bromide paper over most other printing methods lies in its sensitiveness and simplicity of manipulation, enabling the photographer to produce a large number of prints in a short time, and at night as well as during the day, and thus being especially useful to the amateur with only his evenings available for photographic work. While on bromide paper as with other methods, the best negatives will always give the best prints, it has no leaning to any particular class of negatives, equally good prints being got from weak or strong, soft or hard, within, of course, limitations, by suitable modification in lighting and developing. It also lends itself readily to

the gratification of the various tastes, or more correctly, the progressive taste of the photographer, he being able, by drying the print while squeezed on to a ferrotype plate or other suitable surface, at will to get a surface as highly polished as if done by the most efficient burnisher, or as rough as the roughest of rough drawing paper.

In printing by con-

By "Katherine Eaton "

"READING THE EVENING HYMN."

Copyrighted.

By "Ontario."

**"THE CONNOISSEUR."**

tact on bromide paper artificial light is always preferable to daylight, and a common kerosene lamp with an inch wick answers the purpose admirably. After a little experience it is easy to always trim it the same way and produce a flame of the same size and intensity. A convenient method for securing regularity in exposure is to select a suitable place on the work table for the lamp, and draw a pencil line round it, so that in beginning operations it may always occupy the same place. Then, at distances of one, two, three and four feet from the lamp draw lines on the table, or better still, drive brass-headed nails in the front, so that in the dim light of the dark room the printing frame may be placed where it is wanted by simply drawing the thumb along

the front of the table. Where a number of prints are made at one sitting the lamp should not be turned up and down for the changing of the paper, but either removed from the room and the changing done by the ordinary dark room light, or, better still, there should be provided a skeleton cylinder large enough to cover the whole lamp and covered with two layers of *post office*, or other non-actinic paper, which, while leaving the light uniform for any number of exposures, will give an ample and safe light for changing and developing. It is an advantage also, although it considerably lengthens the exposure, to interpose between the light and the printing frame, a translucent tissue, such as even homogeneous tissue paper, tracing paper, or ground glass, placed as close to the former as possible.

The paper is supplied in three varieties, A, B and C, A being thin and smooth, B smooth and thick, and C thick and rough surface. The selection will, of course, depend partly on taste and partly on the size and nature of the subject, but the manipulation is the same for all three. The paper is placed over the negative in the printing frame in the ordinary way, and the frame set on end on one of the lines marked on the table or in line with one of the brass-headed nails already mentioned; but which? That is a matter for consideration and the elements to be considered are as follows: The color of the print depends to a certain extent on the intensity of the light; that is, *ceteris paribus*, a print exposed at, say, one foot from the light, for, say, twenty seconds, will on development have a grayer or less purely black tone than one exposed at two feet for eighty seconds, although theoretically the amount of light acting on the sensitive surface is the same. Then the penetrative power of the light seems to vary with the intensity, better results, that is, better gradation being got from thin negatives at greater than at nearer distances, and *vice versa*. A strong, hard negative will give the best prints if the exposure be made at about a foot or less from the light, while a thin weak negative should not be brought nearer than about two feet.

Much that I said on the development and exposure of transparencies on page 359 of last volume is equally applicable to bromide printing. The developer should be a fixed quantity and the exposure made to suit it; but with a uniform light and classified negatives that becomes a very simple matter. For a long time ferrous oxalate was universally employed in the development of bromide paper, and although it has now largely given place to the more modern developing agents, and especially metol. I am not quite sure that the change has been an improvement. The formula given for lantern slides will answer admirably for bromide paper,

and I repeat it here for the benefit of those who may not have the last volume at hand.

Copyrighted.

"GIMME A LIGHT."

By "Iquitos."

*Third Prize.*

DEVELOPER FOR BROMIDE PRINTS.

Metol.....	20 grains.
Potassium Bromide .....	20 grains.
Sodium Carbonate. ....	50 grains.
Water. ....	10 ounces.

This may be used over and over again, as much as will well cover the paper being poured into a tray, and returned to the stock bottle when the operation is finished.

When the paper is taken from the printing frame it should be placed



face up, in a tray of water and lightly brushed by the tips of the fingers, or if the operator is very particular, by a flat camel-hair brush, to remove dust or prevent the formation of air bells. When the paper is limp pour the water from the tray taking care that it leaves the paper lying flat in the bottom to which it will adhere during development. Pour on the developer and keep it in motion by gentle rocking till the operation is complete which will be as soon as the image is just a little—a very little only—darker than the finished picture is desired to be, as it loses very little in the fixing process. It should then be washed in two or three changes of water, and transferred to the fixing solution, which need not be stronger than one ounce of hypo in ten ounces of water, and kept there for ten minutes. If there are a number of prints being fixed together they should be kept in motion. They should then be washed in at least four changes of water, transferred to an alum bath of say an ounce of powdered alum to the pint of water for another ten minutes, and after another washing in four changes of water, hung up to dry.

If, however, the prints have been made on either of the smooth varieties of paper, and a highly glossy instead of a matt surface is desired, they should be transferred from the water to a ferrotype plate, sheet of plate-glass or of polished rubber, they should be drained of the surplus water and laid face down, and the squeegee passed over them several times, at first lightly, the print being kept in position by finger pressure on the left end, and then sufficiently heavy to expel the whole of the surface water and produce perfect contact. A sheet of blotting paper may be placed over the back.

If placed in a warm place they will, or most of them, in the course of an hour, fall off of their own accord, with a surface equal in gloss to that on which they had dried. But I have said "or most of them," as it is within the painful experience of most operators that although 99 per cent. may so come off, the other one sticks and sticks so determinedly as to require both hot water and a scraper to remove it and that only in fragments. Of course it is always the best print that is thus lost, and therefore it is desirable to take the little trouble necessary to prevent the catastrophe. It is simply necessary to keep on hand a solution of white wax in sulphuric ether, strength of no importance, and with a tuft of cotton moistened with this, go over the plate, and with a soft cloth—an old handkerchief kept for the purpose answers well—wipe it all, or nearly all off again. Or it is almost as effective and a little simpler to keep in a pepper caster some powdered talc or *French chalk*, dust a little over the plate, and with a soft cloth by a circular motion wipe it, all that is visible, off again.

Prints on the thick bromide paper, either smooth or rough, with a suitable margin, or, for a certain class of subjects, vignnetted, have all the beauty of fine steel engravings, and are stiff enough for the portfolio without mounting. For printing with a margin or vignetting, a printing frame considerably larger than the negative is necessary; for 7x5, say 10x12, which would afford a margin of two and a half inches. I take a piece of cardboard a little thinner than the negatives and the exact size of the inside of the frame, and in the centre cut an opening the size of the negative.

The frame must, of course, have glass, as indeed should all large frames. On the glass is laid the cardboard, and into the opening is placed the negative, round the edges of which has been pasted strips of black "needle paper" so as to cover the rebate lines, and wide enough to cover the seams between the edges of the glass and cardboard. Of course, this is a little trouble, but the certainty and immunity from chance of slipping is worth it. The same arrangement is available for vignetting, although the "needle paper" is not required. In a sheet of cardboard a little smaller than the frame cut an opening of the necessary size, depending, of course, on how much of the image is to be included, and oval, circular, or irregular, as may best suit the subject. During exposure this is held pretty close to the frame, and kept moving in an oval, circular, or irregular direction. The motion must be limited in extent, but just how much, as well as just how large the opening should be, will be found by one or two experiments.

I have said that I am not quite sure that metol or any of the modern developing agents are quite equal to ferrous oxalate for bromide paper, and so append the formula practically as recommended by the Eastman Kodak Co.

## FERROUS OXALATE DEVELOPER.

No. 1.	Potassium oxalate . . . . .	8 ounces.
	Hot water, . . . . .	24 "
	Acid acetic, . . . . .	1 ½ drachms.
No. 2.	Iron protosulphate, . . . . .	8 ounces.
	Water, . . . . .	16 ounces.
	Acid citric, . . . . .	1 drachm.
No. 3.	Potassium bromide, . . . . .	1 ounce.
	Water, . . . . .	32 ounces.

The solutions keep for a considerable time separate, and just before development must be mixed in about the following proportions: No. 1, six ounces; No. 2, one ounce; No. 3, half a drachm; special care being taken to add them in the order given. When development is complete, the solutions should be poured off and the print treated to three changes

of water to which acetic acid has been added in the proportion of one drachm to the quart, then washed in six or eight changes of water and hung up to dry, or squeegeed on to a polished surface as already explained.

It is important to remember that the washing in acidulated water must immediately succeed development, as if it is transferred directly from the developer to plain water the prints will be covered with an insoluble yellow stain.

It may happen that development has been carried too far and the finished product be much too dark. The best way in that case is to throw it away and make another; but if that may not be desirable, there is a fairly successful remedy. Immerse it in a weak solution of chloride of copper, the strength is immaterial, a few grains to the ounce, till the image completely disappears. Wash well in at least eight or ten changes of water, and redevelop with ferrous oxalate in the same way, stopping the action as soon as the shadows are sufficiently black, and fixing and washing as before.

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Extract from a letter from the Editor of the Blue Book of Amateur Photographers, who has a world-wide reputation as an amateur photographer.

BRACH BLUFF, Mass., U. S. A., Dec. 4, 1894.

*Walpole Dye & Chemical Co. Walpole, Mass.:*

To-day I found the Hypo sent me about a year ago just as *fresh* and *dry* as it had first come from you, while Hypo bought in London has *disappeared* and *soaked all its surroundings*.

Faithfully yours,

WALTER SPRANCE.

By "Albanian."

MIDSUMMER DAYS.

## A New and Modified Method of Developing Photographic Prints on Paper with Coal Tar Products in Alkaline Solutions.\*

BY HENRY J. NEWTON.

SO far as I am aware it is universally admitted that photographic prints made on paper coated with albumen and sensitized with chloride of silver and printed by the solar light, fixed and toned in the usual way, are transient.

In a short time their exquisite beauty begins to fade and the pure whites assume a disgusting yellow, and the thing of beauty has started on a journey in which there are no way-stations or resting places. Science has exhausted her resources in efforts to arrest this demon who makes perpetual war on our most choice treasures, and defaces our most valued jewels and has made our beautiful art science a by-word and reproach. The mourning that this is so has been universal; it has far exceeded the fabled sorrow of Rachel for her children. The question is still asked with emphasis, is there no remedy? Is there not even the prophesy of hope that these serious and almost fatal objections to the ordinary photographic print can and will ultimately be overcome?

Leaving out mechanical processes and printers' ink, we will look briefly to some of the impediments which obstruct the path of progress.

As a rule people who are interested in photography are so interested because of commercial relations. There are fortunes invested in photographic paper, there are gigantic competing interests that advertise their wares in the photographic journals, these journals as a rule are owned and run by some stock house for photographic goods. In saying this I am not finding fault with the commercial wheels in this great business machine but simply calling attention to a few existing facts which can be used to obstruct progress, and I am inclined to think have been so used when any progress conflicts with ponderous commercial interests. It might not be quite proper to say that these journals are in the market and for sale to the highest bidder, but there is no question but that they are published because there is money in it and for no other reason. Therefore economy becomes a dominating element to the owner of a photographic journal, and where parsimony is an influence the price for the services of an editor comes first, his ability second. This will rationally account for the intellectual character of these periodicals and can to a certain extent be used as an excuse for any exhibit of weakness in this

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\* Read before the Photographic Section of the American Institute. January 15th, 1895.

department. A long sermon could be preached on the unhealthy influence of such an editor in the hands of a crafty financier. An editor of a photographic journal would necessarily become interested in subjects published in it and would also come to wield an influence bounded only by the sphere covered by its patrons.

Such an influence in the possession of a weak, parsimonious or dishonest person is therefore a danger and a menace and is liable to be used improperly in a great variety of ways. I am presenting these facts for your consideration, so that in case any one who hears what I have to say should come in contact with some of these wheels in motion in any part of this financial edifice, he can rationally account for what happens.

A great variety of influences have caused the growth of photography from the hand of Daguerre and Niepce, and developed the marvels and wonders not dreamed of by these men. I will allude to only one or two :

First, science has been the great and all-powerful motor both in front of and behind the foot-lights. John W. Draper in this country stands first, and from him there is a long line of lesser lights, each one contributing something which goes to make the grand whole, all with scarcely an exception starting as amateurs. Professional photographers, as a rule, have little or no time to experiment, so this is done by amateurs, and to them is mainly due all progress in it, in every direction, and at present I can see no reason why there is likely to be any change.

If a professional stumbles on anything valuable he rushes to the Patent Office first and secures his exclusive right to use it ; amateurs have been known to do this, but it is the exception. There is nothing wrong in securing a patent for anything you are entitled to, but amateurs as a general thing have given their valuable findings to the public gratuitously. In the last three or four years much labor and time has been spent in experiments on a variety of new methods of producing photographic prints. Professionals and amateurs are now furnished papers ready sensitized, gelatine and collodion emulsions in some cases have been substituted for albumen ; but so far as my experience goes and as far as I have been able to learn the experience of others, there is no exception to the rule, whether the vehicle carrying the sensitive salt be an albumen, gelatine or collodion emulsion, prints produced from chloride of silver by solar light and toned with gold and fixed in hyposulphite of soda become, by this process, exposed to the fatal malady which requires only time to destroy them. This is photography as it stands to-day.

I do not propose to discuss the question of why this is so ; the simple fact that it is so will for the present have to suffice. I propose to look

at another and later method of obtaining prints with the bromide of silver and by development.

As the result of experiments which I have made I feel justified in predicting great and gratifying results for photography. I wish at this early stage of this investigation to have it distinctly understood that what I contribute as results so far obtained, should not be taken as final from any point of view. There are other fields along this line to be explored after my suggestions have been tried by professional and amateur photographers. One for instance is the variety of tones which can be produced by the action of different chemicals in the developer or otherwise.

I have had sent me prints by this process which had been toned a beautiful warm, brown tint; this will ultimately all be put into your possession. I am satisfied from observation and the investigation I have made, that prints made by development from bromide of silver are *absolutely permanent*. If I am right in making this assertion it will not be so because I say it or have had much or little to do with it. It will be so because it is so.

The bromide paper was first made in Europe, and the first prints we have are on imported paper. The keeping qualities of this paper before using as well as after is an important question. I have kept samples manufactured by one firm three years and a half without its exhibiting any signs of deterioration. The firm that made this brand of paper assures me that they have it five years old, and it is as good now as when first made. If this paper is properly made I don't know why it should not keep as long as the ordinary dry plate. Here is some testimony as to its keeping qualities after printing which it gives me pleasure to be able to present.

Mr. F. C. Beach, of the *Scientific American*, writes me as follows: "A bromide enlargement equivalent to a print on gelatine bromide paper has been in a frame exposed to the light for the past ten years in the rooms of the Society of Amateur Photographers of New York, and the reduced silver image is as bright and brilliant to-day as it was when the print was first framed, though the white portions have changed slightly from white to yellowish color which is regarded as due entirely to the discoloration of the paper support itself rather than to any alteration or fading of the reduced gelatine silver salts. This print was developed with ferrous oxalate and fixed in plain hypo."

Is it a fact that photographers are in possession of a simple method of producing prints from their negatives which are permanent?

There could not be asked a more important question than this, and as

far as my reply goes toward answering it, I say, unhesitatingly, the evidence so far answers the question in the affirmative.

The method of developing prints from this paper as given by the manufacturers is, with one or two exceptions, so far as I know, the ferrous oxalate developer and the formula accompanies each package of paper. The trouble I encountered in developing bromide paper by any of the ordinary processes, was in controlling the developer, and my labor has mainly been to construct a developer so that at all times it would be under perfect control, in other words *go slow*—so slow as to make the danger of over-printing the minimum and no danger of its running away with you. I finally adopted the alkaline for the ferrous oxalate developer. Different alkalies do not produce uniform effects on paper manufactured by different firms. The carbonates produce a browner black than the caustic alkalies. The beauty of the print after all, will, to a certain extent, depend upon the bromide in the developer. I hope any one who attempts to use the bromide paper will experiment a little and develop a picture without any bromide in the developer, and then make a print with two grains of bromide of sodium to the ounce of developer, and note the difference.

I will now give some formulas for developers: A great variety in tones may be made by modifying the proportions of the ingredients. There are other chemicals which act with more or less energy as a restrainer. In using hydroquinone as the principal agent, bi-carbonate of soda, borate of soda and boracic acid act as restraining agents, but in the case of amidol none have that effect except boracic acid and that but slightly. Therefore, in introducing these agents you will understand what office I expect them to perform.

The first is as follows:

Water.....	1 ounce.
Sodium sulphite .....	15 grains.
Sodium bromide.....	2 grains.
Sodium carbonate .....	5 grains.
Hydroquinone.....	3 grains.
Metol .....	1 grain.

If you wish this developer to work slower add either ten grains, of bi-carbonate of soda or ten grains of borate of soda or five grains of boracic acid to the ounce of developer. This is the best I have yet found with the carbonate alkalies; some may prefer the effect of carbonate of potash. My advice is that you try it.

The caustic alkalies produce blacks which I think are deeper and richer. The papers furnished by different manufacturers vary somewhat

in tone under the same treatment, so you will select the paper which gives the most satisfactory results according to your taste, and the photographer, whose taste is that of a majority of the patrons of photography, will be the most successful.

The simplest form for a developer with caustic alkali is lime water instead of plain water. Substitute it for the carbonate of soda in the foregoing formula. Another modification is the addition of two grains to the ounce of water, of caustic soda, afterward treated the same as in my first instance. I have made some of my most beautiful prints with barium hydrate. In using this ingredient, use five grains to an ounce of water, because in the first place only seventy to eighty per cent. of the barium salt is soluble; and further, when you add the sulphite of soda a percentage of the barium solution is converted into an insoluble barium sulphate which makes the barium developer resemble in appearance a cup of milk. It will settle clear, however, in a short time, but there is not the slightest use in waiting, as the milky appearance has no chemical action on the papers. Strontium hydrate also will be approximate in its effects to barium, in a developer, but I have discovered no special advantage over it.

The simplest of the caustic alkalies seem to me to be lime water which is water saturated with calcium hydrate. This can be made a commercial article by evaporating it to dryness. To do this so that it will be in the most available form, add four ounces granulated sugar to a gallon of lime water and then evaporate to dryness. The salt thus obtained can be re-dissolved to suit when a developer is to be prepared.

All of these developers keep indefinitely, even if they stand in the graduate several days their developing power seems the same. They rarely change color at all. They have harnessed within them sufficient potential energy to keep them at work as long as there is any exposed paper on which they can exert their power.

Into any of these developers a dozen or two exposed prints can be put at a time and developed together much the same as they are toned at present so the printing and developing prints by this process will be much less troublesome and consume much less time and beside that, which is of much more importance, they will be more beautiful, and we have the best of reasons for believing they will be permanent.

The fixing of prints on gelatine bromide paper should be thorough and done carefully. I found at first much difficulty in getting satisfactory results in using ordinary hyposulphite of soda. So I resorted to hyposulphite of ammonia securing much better prints; but the expense stood in the way. McKesson & Robbins kindly made me some in liquid



form, being unable to crystalize it. However, the results were satisfactory. At my request they imported from Germany a dozen pounds in crystals, having the appearance of needle crystals; but it was too expensive for ordinary uses.

I thought of a cheaper compound which I find in practice answers the same purpose and is easily made.

It is prepared as follows and the chemicals are dissolved in the order given:

Water .....	10 ounces.
Pulverized Alum .....	100 grains.

When dissolved add

Sulphate of Ammonia.....	480 grains.
Hyposulphite of Soda .....	2 ounces.

This fixing bath has the merit of keeping white and clear, and can be used repeatedly until it is exhausted while the film is hardened and the whites are clear.

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**\*CHEMICAL RETOUCHING.**—The principle of this method consists in arresting the action of the developer on the parts of the negative which came up too rapidly. For this purpose, as soon as it is apparent that these portions are almost fully developed, the negative is removed from the developer, allowed to drain a moment, until there is no free liquid on its surface. Then all the portions where the detail is sufficient are painted by means of a camel's hair brush with a five per cent. solution of bromide of potassium. The gelatine absorbs this solution very rapidly, and the places may be gone over several times, according as the detail is more or less out. The negative is then returned to the developer, and the development continued until the detail comes up in all portions of the negative. The development is nearly or quite arrested wherever the bromide was applied, and these portions do not gain in density. In the end a negative is obtained with detail throughout. It is not necessary to use extreme care in applying the bromide, for on replacing the negative in the developer, there is a diffusion which softens the contours of the portions painted, and it is impossible to notice any trace of them in the finished negative. We have tried the method many times, and always with great success. In instantaneous landscape when the sky is covered with clouds, which ordinarily would have disappeared in development while trying to obtain detail in the landscape, we have applied the bromide with a rather large brush all over the sky as soon as the clouds were well out. In another case it was a white statue on a background of shrubbery; this time a fine pencil was used to paint the statue, and in another case this method enabled us to preserve a few scattered hairs on the head of a friend who was extremely grateful to us for it.—G. MARESCHAL, in *Photo Gazette*.

\*(This paper was read before the Society of Amateur Photographers by Dr. John H. Janeway.)

# THE AMERICAN AMATEUR PHOTOGRAPHER.

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EDITORS:

F. C. BEACH.

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## Editorial Comment.

*Our Illustrations.*—We present illustrations in this number selected from the best of the prints contributed to our champion artistic competition last November and judged by Messrs. Davison and Robinson. We hope those of our readers desirous of learning how to make artistic photographs will study the good points in the pictures and note the criticisms made by Mr. Davison.

*Awards in Our Second Annual Lantern Slide Competition.*—It appears, owing to the unexpected illness of one of the judges, Mr. Stieglitz, an error was made in the report as regards the award of a silver medal to Miss E. V. Clarkson, Class II., "Landscape and Marine Work." It should have been a bronze medal, and as thus corrected the awards stand as first stated. The prize slides are being labeled and listed and will be ready for shipment to clubs desiring their use shortly before March 1. The following clubs have thus far made application for the exhibition of the set:

Akron (Ohio) Camera Club,

Lancaster (Pa.) Camera Club,

American Lantern Slide Interchange, which includes 24 clubs and societies.

*New York Society Members' Exhibition.*—The annual members' exhibition of the New York Society of Amateur Photographers occurs at the rooms

of the society, 113 West 38th Street, New York, March 13 to March 27 inclusive. Exhibits should be delivered by March 4. It should be an excellent exhibition as there are several members who have the reputation of making artistic work. Exhibits from persons not members will be received, but cannot compete for medals.

*Independent Journalism.*—In his paper on an improved developer (see page 67), Mr. Henry J. Newton precludes it with comments on the average editor of photographic journals, rather derogatory to the standing of the editors. The field of photographic supplies has so greatly enlarged and is covered by so many different concerns that we think his remarks do not apply as well to the present time as formerly. So far as THE AMERICAN AMATEUR PHOTOGRAPHER is concerned, it has steadily maintained since its beginning a policy of independent, fearless criticism and comment, free from trade bias. We notice such a course has been greatly appreciated by our readers.

*Transportation Embargo on Gas Cylinders Removed.*—In our January number we alluded to the unjustifiable attitude the express companies had taken in reference to the shipment of gas cylinders carrying gas at a safe and low pressure. We are now advised that on February 1st the embargo order was reconsidered and rescinded, and that cylinders will be taken and transported as heretofore. This sensible backdown will be welcome news to lecturers, dentists, physicians and others who are constant users of gas and restore a good source of income to the companies.

*A Rising Front Hand Camera.*—Mr. Edward H. Lyon showed us lately a desirable improvement which he had put on his hand camera, consisting of making the front section, holding finder, shutter and lens, in such a way that it was readily elevated by means of a rack and pinion, accessible on the exterior. He found it of great advantage in taking street views where it was impossible to include all of a tall building, unless the camera was tilted upward. With the addition he was able to hold the camera level and get the perpendicular lines parallel. We think it is quite a desirable improvement.

*Celluloid Plate Racks.*—Mr. Harry W. Smith, Treasurer of the Newark Camera Club has shown us a square celluloid grooved plate rack or holder, for holding negatives in fixing and washing baths, which is quite light and unique. It has a long celluloid vertical post handle, which enables the rack to be immersed in a pail or other deep vessel to advantage. Its superiority over metal is found when fixing plates in an acid fixing bath, as there is no metal to be attacked by the acid bath. The negatives may be lifted from the fixing bath in a body and immersed without handling in the washing box or tank.

## Society News.

**MEMPHIS CAMERA CLUB.**—On the 10th of January the special collection of lantern slides illustrating the mid-Winter Fair, gotten up by the California Club, were shown to a large and appreciative audience.

**HARVARD CAMERA CLUB.**—The Club is to hold its annual exhibition March 7th, 8th, 9th and 10th. There will be three classes of photographs. In the first class all the work except the printing and mounting must be done by the exhibitor. For this class a first prize silver medal and a second prize bronze medal will be awarded. A second class for portraiture only will be under the same restrictions as the first class, but only a first prize will be given. In addition, the Club offers a prize for the best set of pictures by one exhibitor, to be judged mainly on their artistic merits. This prize will be awarded as last year by Prof. Norton. The first two classes will be judged by members of the Boston Camera Club. The competition is open to all members of the University, students and officers.

**NEWARK CAMERA CLUB.**—A special meeting of the Club was held on January 14th to consider changes in the by-laws. On January 28th, the 1893 *Photography* prize set of slides were shown.

**SYRACUSE CAMERA CLUB.**—At the annual meeting held January 11th the following was the result of the election for officers and directors: President, W. H. Olmsted; Vice-President, Geo. Timmins; Secretary, Herbert F. Smith; Treasurer, John D. Pennock.

These officers, with the following, which were also elected at this meeting, constitute the Board of Directors: C. E. Lipe, Fred. Brower, F. E. Schuauber and Geo. Worth.

After the meeting the retiring Board of Directors tendered the members an elaborate lunch. Informal toasts and much jollity prevailed. The Club is in a prosperous condition.

The above officers are all enthusiasts at photography, and will undoubtedly make a strong team in administering the affairs of the Club during the coming year.

[NOTE.—Mr. Olmsted, the new president, it should be remembered, is an enthusiastic lantern slide maker and assistant manager in the American Lantern Slide Interchange. There can be no question as regards the future progressive policy of the Club under his able lead, and we wish the Club the success it merits for selecting such a good set of officers and directors.—EDS.]

**January 18th**—The Club gave an exhibition of the London Lantern Society slides and much enjoyed the Venetian pictures by Chas. E. Gladstone.

**CALIFORNIA CAMERA CLUB.**—The regular monthly meeting was held on January 8th. At the Wednesday evening meeting, January 9th, Mr. O. V. Lange gave a demonstration on developing with Eiko-Hydro.

**January 16th.**—The interchange slides of the Newark and Orange Camera Clubs were shown at the Gem club rooms.

**January 18th.**—"Scenes Strange and Sights Familiar," by Captain Henry C. Cochrane, was the subject of the fifty-sixth illustrated lecture at the Metropolitan Temple.

**January 28d.**—Dr. S. C. Passavant gave a demonstration on developing instantaneous exposures with amidol and metol.

**BOSTON CAMERA CLUB.**—An exhibition of small camera work was held by the members of the Club from January 16th to January 26th inclusive, at the rooms of the Club, No. 50 Bromfield St.

The Club is starting a special interest in slide making, and is organizing a special Lantern Slide Contest. The Club supplies four negatives; each competitor must make a slide from the negatives and the sets of four are then to be left to a committee of judges composed of three members of the Club and a prize will be given for the best set. The slides must be ready by March 1st. At the annual meeting held January 7th, the following officers were elected: President, George M. Morgan; Vice-Presidents, William Sumner Briggs, J. Prince Loud, Charles Sprague; Secretary, Wilbur C. Brown; Treasurer, Owen A. Eames; Librarian, Albert E. Fowler; Executive Committee, for three years, Charles H. Currier, Frederick S. Anable; for one year, to fill unexpired term of J. C. Holman, resigned, James Means.

**THE PHOTOGRAPHIC SOCIETY OF JAPAN.**—The regular monthly meeting was held in the Geographical Society rooms, Tokio, on December 13th, 1894. Mr. C. D. West, M. A., in the chair. Mr. K. Arito had sent a print on solio paper from London, printed one minute in sunlight and afterwards developed with hydroquinone caustic soda and tannic acid and fixed in a bath of hypo, alum and borax. A sample of American Arito was shown.

The Chairman then called on Messrs. W. K. Burton and T. Kondo to demonstrate the Kalotype process.

The demonstrators stated that they considered this process to have certain advantages over any other. They would not compare its general merits with those of the Platinotype process, which latter they considered the first of all processes, but it—the Kalotype process—had certain advantages of its own. It was cheap, and very easily worked, and was the only process they knew, giving a visible image, that would give a true black print from a thin negative and that seemed suitable to almost any kind of paper. The process depends on the fact that ferric oxalate is sensitive to light, being changed thereby into ferrous oxalate, which latter salt has the power of reducing various metallic salts, nitrate of silver amongst the number.

The process is a very old one, but that worked by the demonstrators was a modification of a recent form thereof, introduced by Mr. O. P. Bennett. The following is a description of the process:—

SENSITIZING SOLUTION.

Ferric Oxalate. . . . .	75 grains.
Silver Nitrate. . . . .	30 grains.
Water. . . . .	1 ounce.

This solution is swabbed over the paper with a wad of cotton wool. The coating is, of course, made as even as possible, but streakiness that cannot be avoided does not as a rule, show in the finished print. The paper is dried in front of a clear fire before the solution has time to sink into it.

Paper so prepared will keep for several days in ordinary wrapping, for months in a calcium tube.

The quantity mentioned is enough to coat about 10 square feet of smooth paper, 5 feet of extra rough drawing paper.

Printing is done in the ordinary printing frames, the time taken being about one-third that needed for albumenized paper. The image is visible, and has the exact appearance of the image in the platinotype process—in fact it is of exactly the same nature—and

any one accustomed to platinotype printing can readily judge when the paper should be taken from the frame.

## DEVELOPER.

Rochelle Salt.....	1 ounce.
Saturated solution of Borax .....	10 ounces.

## RESTRAINER.

A one per cent. solution of bi-chromate of potassium.

The effect of the restrainer is very marked. Without any of it, the prints are liable to be "muddy" and to have impure whites. The least that is needed is 7 or 8 minims to each ounce of solution, and no more than this should be used for negatives such as are suitable for printing with albumenized paper or such as are at all hard. In printing from thin negatives, restrainer up to the extent of 30 minims per ounce may be used, the exposure being correspondingly increased. In this way it is possible to get brilliant prints from negatives too thin to give such by any other process.

The image develops from a pale yellow color to a full deep black in a few seconds, but if the print be at once removed from the solution it will be found that the high lights are yellow. It must remain in the solution for at least a quarter of an hour. It is to be observed that no further actual developing action takes place during this time. Though the developer can be altered to suit different negatives, or even to a certain extent to compensate for error in exposure, the result cannot be modified in any way when once the print is in the developer.

In using smooth paper, a number of prints may be developed in the same solution, pouring the developer into a measuring-glass as soon as one print is developed, placing an undeveloped print on the top of this latter, and returning the developing solution, the prints being afterwards kept moving just as in the ordinary toning process. In using very rough paper, however, this procedure is not permissible, as the image gets rubbed from the tops of the roughnesses of the paper, with result of a mottled effect.

After development the prints are washed in three or four changes of water, and are then placed in the fixing bath, consisting of a one per cent. mixture of strongest ammonia and water, where they remain for about a quarter of an hour. Washing for half an hour completes the process. A number of samples of work on different kinds of paper were shown, some being on common cartridge paper. The proceedings ended with a vote of thanks to the chairman.

**MINNEAPOLIS CAMERA CLUB.**—At the regular January meeting of the Board of Directors, January 9th, of the Club, three active members of the club were elected. Mr. A. L. Eidemiller, who has been Secretary of the Club since its inception until the present year and Vice-President this year, handed in his resignation, to take effect at once, as Vice-President, as Chairman of the Lantern Slide Committee, Local Director of the American Lantern Slide Interchange and member of the Auditing Committee.

The Board was loth to accept Mr. Eidemiller's resignation as he has been, and is, a most enthusiastic member, but his business relations were such that he was obliged to take the step.

Mr. W. B. Augir was appointed to fill the vacancy on Auditing Committee. The Vice Presidency was left open till the next meeting, while C. J. Hibbard was appointed to fill the vacancy in Lantern Slide Committee, and act as Local Director of the American Lantern Slide Interchange for the balance of the year.

[We are sorry to note Mr. Eidemiller's resignation, he having been very active in the interest of the American Lantern Slide Interchange.—Eds.]

**BUFFALO CAMERA CLUB.**—In January the Club gave an exhibition for two weeks of the Buffalo Express competitive photographs at the rooms of the club, which was very successful attracting a great number of visitors. The work included much variety in subjects and was a surprise to many. On January 26th the slides of the St. Louis, Bethlehem and Schuylkill Camera Clubs and a set illustrating scenery along the Great Northern Railway, were shown.

**CINCINNATI CAMERA CLUB.**—On January 19th, an artist of note, Mr. H. F. Farney, lectured before the club on "The Camera in Art." He is reported in the *Cincinnati Tribune* to have spoken as follows:

"The camera has made us (artists) specialists. We have been compelled to drop the historical and take up the realistic to a greater extent.

"In the field of the illustrator the camera is replacing the staff artist. It is underestimated as an instrument of art. The eye can in no way compare with the lens in analyzing the composition of a crowd. Its streams and eddies can only be made clear by the use of the camera.

"While it has its advantages in the hands of an intelligent man, it certainly has its drawbacks, and is a hard master to the unartistic and thoughtless. Some of the best toned productions of amateurs are the result of over exposures. Many of the most successful artists utilize its advantages, while he who slavishly follows it in all its distortions fails.

"As a note book, as a kind of shorthand for preserving records and obtaining accidental hints for composition, it is invaluable. But I wish to warn all against overdevotion to detail and technique."

After telling some very laughable incidents in procuring Indian photographs without an instantaneous shutter (before these shutters came into use), he explained how, by placing a man with a surveyor's pole a distance away from the Indians, and focusing thereon with all the surveyor's motions and signals, he was enabled to allay their fears until the camera could be turned upon them.

Mrs. Thomas H. Kelley and Mrs. H. C. Fithian assisted with vocal and instrumental selections.

**SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK. Regular Monthly Meeting.**—Tuesday evening, January 8th.—President R. A. B. Dayton in the chair. The scientific business began with report of the Committee on Progress of Science and Art, in which the following papers were presented by Dr. John H. Janeway, the chairman.

**MONOCHROME PRINTS.**—Mr. Maximilian Toch, in Anthony's International Annual, 1895, recommends the following processes:

The paper is immersed or floated in a solution of potassic bichromate and well dried. After the image has thoroughly appeared (usually 10 minutes' exposure in bright sunlight will suffice) the print is well washed (about half an hour in a slow stream). To obtain a black effect resembling a lithograph immerse the print in a solution of ferrous sulphate. Wash thoroughly again and tone in a solution of tannic acid and the desired shade will rapidly appear. If ext. of logwood be substituted for tannic acid purple brown tints will be the result.

If chloride of tin be substituted for the ferrous sulphate and after that ext. of hyperic wood used, rich maroon shades will be the effect—orange tones can also be obtained.

I tried this process with the two first directions but failed to obtain clear whites and the image sank into the paper.

Upon inquiry, Mr. Toch kindly stated the impure high lights were probably due to

the paper I used. He recommends Whatman's. The strength of the solution he generally uses is 10 per cent. From what I have seen I think these processes will be very interesting and worth trying.

**TO REMOVE CHEMICAL STAINS FROM THE HANDS.**

Mix 4 ozs. of Glauber salts,  
4 ozs. of chloride of lime,  
8 ozs. of water,

and keep in a wide mouth glass stopped bottle. When required for use, pour a little in a saucer, and rub it well over the stain with pumice stone or an old nail brush.

Stains of nitrate of silver are best removed by means of a solution of chloride of iron.

I can recommend both of the above from personal experience.

**TONING AND FIXING IN SEPARATE BATHS.**—Toning bath for No Collodion paper:

**STOCK SOLUTIONS.**

**A.**

Sodium bi-carbonate .....	30 grs.
" acetate .....	25 "
Water .....	10 ozs.

*Sig.:* Make the day before using.

**B.**

Chloride of gold .....	15 grs.
Water .....	7½ oz.

**M.** This makes 2 grs. of gold to oz. of solution.

For use add a few drops of gold solution and enough of A to cover paper. 1 gr. of gold should tone about 2 sheets of paper.

**ALBUMEN BROMIDE PAPER.**—A highly sensitive developing paper is obtained if ordinary silvered albumen paper is put into the following bath for about (5) minutes :

Bichromate of potash, 8 grammes.	133½ grains.
Bromide of Potash, 4 "	61½ "
Water, 300 c. c.	9 ounces.

After washing from one (1) to two (2) hours, the paper is dried and exposed to lamp-light from 10 to 30 seconds and developed perfectly with amidol.—*Photo. Archiv.*

*Experiment 1.* Four pieces of freshly prepared, ready sensitized silver albumen paper was placed in the above bath and allowed to remain in it five and a half minutes, then washed from one to two hours, dried and exposed to lamp light for fifteen seconds. Not having any amidol developer, I used a freshly prepared metol one. Results—nothing.

Thinking that perhaps the citric acid used in this paper interfered, I procured from Mr. Sarony some fresh sensitized silver albumen paper and rung the changes on it as follows :

- 1st. Bathed the paper in sensitized solution ten minutes and then dried.
- 2d. Soaked the paper in water for ten minutes, bathed in sensitizing solution ten minutes and dried.
- 3d. Sensitized the paper dry for ten minutes, and washed for one hour, and dried.
- 4th. Soaked the paper in water, bathed in sensitizing bath for ten minutes, and then washed for one hour and dried.

Exposed the four sheets of paper for thirty seconds and used the metol developer. Results—nothing but discolored paper.



EXPERIMENTS TO TEST THE PROTECTIVE POWER OF SULPHITE OF SODA IN METOL DEVELOPERS.—Eight test tubes were used as follows :

1.	Containing metol, 1 grain; water, distilled, 1 ounce.
2.	" " 1 " sulphite of soda, 2 grains; water, 1 ounce.
3.	" " 1 " " " 3 " " 1 "
4.	" " 1 " " " 4 " " 1 "
5.	" " 1 " " " 5 " " 1 "
6.	" " 1 " " " 6 " " 1 "
8.	" " 1 " " " 8 " " 1 "
10.	" " 1 " " " 10 " " 1 "

All well stopped with cotton and placed in a dark room. Examined forty-eight hours afterwards with the following result :

No. 1.	Slightly straw colored.	No. 1.	Same as before.
2.	" " "	2.	" slightly deeper straw.
3.	" " " especially on top of sol.	3.	" slight straw.
4.	Clear.	4.	" clear.
5.	" "	5.	" "
6.	" "	6.	" "
8.	Slightly precipitate black.	8.	" precipitate increased.
10.	Slightly more precipitate black.	10.	" precipitate increased and stopper withdrawn.

96 hours.—No. 1.	Sherry color.	96 hours.—No. 5.	Clear.
2.	Light straw color.	6.	" "
3.	Lighter straw color.	8.	Precipitate increased.
4.	Clear.	10.	" "

To each of these solutions there was added two and a half grains of crystallized carbonate of soda, with the following results (still exposed to the air) :

No. 1.	24 hours.	Very much discolored.
2.	" "	Dark Madeira in color.
3.	" "	Light sherry in color.
4.	" "	Perfectly clear.
5.	" "	" "
6.	" "	" "
8.	" "	Precipitate much increased.
10.	" "	" " "

Forty-eight hours after :

No. 1.	Discoloration much deeper and some precipitate.
2.	Port wine color.
3.	Dark straw color.
4.	Very light tinge on surface, straw.
5.	Still lighter " " " " }
6.	Clear.
8.	Light straw color, precipitate increased, black.
10.	" " " " }

Only discoverable by examining in front of white paper.

Inference so far—that less than four grains of sulphite to one grain of metol in one ounce of water will not preserve it intact, and that more than six grains of soda sulphite to the grain of metol injures it. A 4x5 plate was exposed in camera about two seconds, on a bright day ; it was then cut up into eight smaller plates, numbered, and each covered by developer from test tube bearing the same number. Results : on Nos. 1, 2 and 3, no other action was detected other than staining the film ; Nos. 4, 5 and 6, action was as of a weak developer—image appeared, but wanting in density ; Nos. 8 and 10 produced no action whatever on the film.

An amateur of prominence in this city states "that an excess of sulphite in any developer, but especially with eikonogen and metol, causes great reduction of density, and, from observation of late, I am free to confess that I agree with him.

**PLATINUM TONING OF MATT COLLODION PAPER.**—Herr Valenta recommends the following method of platinum toning. After washing the prints are immersed in a solution made as follows:

A	{ Water,	- - - - -	500 grammes.
	{ Soda Phosphate,	- - - - -	50 grammes.
B	{ Water,	- - - - -	500 grammes.
	{ Potassium Oxalate,	- - - - -	100 grammes.

The two solutions are mixed and to 100 cc. of the mixture 1 cc. of the double chloride of sodium and platinum (19.10) is added. The prints take a black tone in this bath, which is changed to brown in the hypo solution (1.10). For black tones the following fixing bath is recommended :

Water,	- - - - -	1000 cc.
Hypo,	- - - - -	200 grammes.
Lead Nitrate,	- - - - -	10 grammes.

To 100 cc. of this solution, 100 cc. of water and 5 cc. of gold chloride (1.100) are added.

**PROTECTING UNFIXED NEGATIVES FROM FOG.**—This may, it is stated, be effected by immersing the plate for five (5) minutes in a solution consisting of

Alcohol,	- - - - -	150 grammes.
Cadmium Bromide,	- - - - -	10 grammes.

This makes the unaltered salt insensitive to light, even direct sunlight. The unfixed plate will, it is also said, keep well for months.

**MERCERIZED CELLULOSE.**—We wonder how many of our readers know what this is? Mercer found long, long ago that cotton wool treated with a strong solution of caustic potash, underwent a considerable change and acquired new properties, some of which have recently been discovered by Caoss, Bevan and Beadle to be a tendency to combine with certain other substances and form new and interesting compounds. To the photographer the most interesting of these is a thiocarbonate which, as it can be produced in continuous films, may take the place of celluloid and be produced at a cost that will enable it to compete successfully with glass.

When mercerized cellulose is treated with the vapor of carbon bi-sulphide it acquires a deep, golden yellow, and on the addition of water is converted into a viscous solution, gradually becoming an almost solid coagulum insoluble in water. If the water be removed by a dehydrating agent like brine or alcohol it is converted into an insoluble varnish which is made into a continuous film as follows. If some of this solution is spread as varnish on a glass plate and immersed in brine the cellulose can in a few seconds be slipped off the surface in the form of a film—advantage has been taken of this property and continuous films have been produced by machinery.—*Photo Beacon*.

**AN INSOLUBLE DEVELOPER.**—Herr E. Liesgang quotes an experiment in which a negative on gelatino-bromide plate was developed with an insoluble substance. A normally exposed plate was immersed in a solution of carbonate of soda and then, having been well strained, in a second solution of ferrous sulphate. The ferrous carbonate formed by double decomposition is said to have developed the negative even more vigorously than iron oxalate would do. The substitution of sulphate of soda for

the carbonate is said to have given nearly as good results. The precipitated carbonate of iron left in the film is removable by dilute sulphuric acid.

ON THE ACTION OF OXALATE OF POTASH WITH EIKONOGEN.—I was requested to experiment with a saturated solution of oxalate of potash added to an eikonogen developer upon plates exposed a very short time with a view to determine the quantity needed to produce good results, it having been used accidentally with unexpected results. I exposed 4 4x5 Wuestner's orthochromatics on a dark, rainy day at 3.30 P.M., stop  $f/32$ , speed of shutter between  $\frac{1}{10}$  and  $\frac{1}{8}$  of a second. Plate one was covered with Mitchell's concentrated eikonogen developer 1 oz., water 4, and at the end of 10 minutes no sign of an image, the plate was allowed to remain in the developer for 30 minutes, when 30 minims of the oxalate solution was added when signs of image appeared; after a few seconds 30 more minims were added, and the same quantity of the oxalate was again added, making 120 minims, when the plate developed as far as it would go—was fixed and numbered 1.

No. 2. Shows a plate same exposure, developed with eikonogen after a long time.

No. 3. Shows the action of the mixed developer after standing all night.

No. 4. Shows the action of a freshly made developer 2 drams (120 m.) of the saturated oxalate being used. The plate was exposed with  $f/16$  stop, time the same. The action was so rapid that with difficulty I was able to get it out of the developer to save any of the image. Oxalate of potash is an active reducer and with carefulness it may be of much value added to eikonogen for short exposures. It quickly becomes useless even if corked up well; what its action will be with other developers, is yet to be determined.

#### A CEMENT FOR CELLULOID.

Camphor.....	1 part.
Shellac .....	6 parts.
Alcohol .....	30 parts.

Another method is to moisten the edges of the celluloid with glacial acetic acid, these are then pressed together and a joint may be secured.

A RESTRAINER.—According to the *Pacific Coast Photographer*, add to the developer one (1) drop of this solution; water, 1000 parts; borax, 60 parts. A few drops suffice to arrest development completely.

As this is a saturated solution time will be saved by simply making it in the usual way. Though not so stated I believe that a Mr. Henderson, England, promulgated the substance of the above. Since then another English writer has controverted it, and claims that instead of being a retarder it is the reverse, and states that borax enters into the composition of many developers, even to the extent of 10 per cent. of the whole of the ingredients, and ignores that a saturated solution is called for in the above formula. The bulk of experimenters and writers in this country regard borax as a retarder, especially in the pyro and eikonogen developers and as far as a few experiments of my own have gone it acts the same with metol.

The report was accepted, and ordered placed on file.

The President announced that on January 11th a meeting of the American Chemical Society would be held in our Society Rooms, at which time Mr. James H. Stebbins, Jr., would read a paper on "The Chemistry of Photography."

February 14th.—The annual auction sale takes place.

February 9th, was held a *Dutch*, said to be an improvement on the regular smoking concert. Attention was called to the annual members' exhibition of prints, to be held March 13th to March 27th, and it was hoped it would be well patronized, inas-

much as the joint exhibition arrangement with the Boston and Philadelphia societies had been given up, and it was probable no general exhibition would be given for some time.

A demonstration of making portraits by the aid of the arc electric lamp, was then undertaken by Mr. Moreno, several members going through the process; the time of exposure averaged eight seconds. The plan consisted in projecting a beam of electric light by means of a parabolic reflector upward, at an angle of 45 degrees, against white cheese cloth, supported overhead by wires or a frame, so that the light coming down upon the face is reflected light, and not at all painful or straining to eyes. Suitable background and side-screens are arranged, to soften the shadow side of the face. Negatives were developed and shown, to prove the practicability of the method. After the demonstration the meeting adjourned.

*Exhibition of Lantern Slides, Friday Evening, January 25th.*—The slides comprised the 1893 *Photography* prize set of slides which had come from Cape Town, South Africa. President Robt. A. B. Dayton presided at the screen and remarked that the original list of the slides having been lost in South Africa a new list was prepared, made up from the titles on the slides, and a few of the names of the makers were missing. There were 166 slides in all shown, arranged in several different classes. In nearly every class a silver or bronze medal and a certificate had been awarded.

**Class I. Home Portraits and Groups.**—Mr. A. R. Dresser took the silver medal, his work being Indian groups in the Wild West Show. His best was a portrait of "Black Heart on Horseback." Cecil Gether took the bronze, and had a capital little picture entitled "Keep Still, Little Sister." The certificate went to Wm. Taverner. His best was a dog photo called "Keeping Watch."

**Class II. Landscapes.**—Silver medal to James Shaw. He had two fine pictures, one "Hoar Frost Chee Dale," and another, "Evening." The latter was particularly naturalistic. The bronze medal went to Edgar G. Lee, a name quite familiar to American audiences. He had, as usual, artistic effects, but one of his most attractive slides was "By the Old Mill." J. J. Loyd was awarded the certificate, and as it happened in other cases, the certificate class appeared to present more variety and originality than in the silver medaled sets. Loyd's "Waiting," sheep taken against the light—a picture of sheep before the bars of a fence, and "At the Cottage," were excellent pictures and slides.

**Class III. Genre Work.**—Mr. E. R. Ashton gained easily the silver medal, with the additional honor of having the best single set of the forty-three sets admitted. His finest were "Bedouin Woman and Child," "An Arab Household," and "Eastern Merchants." All were characterized by an exquisite softness and detail that it is sometimes difficult to obtain but is very pleasing.

W. A. Hawes was given the bronze, and had three very good pictures in his set one, "Deer Stalking—Taking a Shot", another "Divers at Work," showing a diver in the act of descending into the water on a ladder, and a third "The Old, Old Story", love, of course. In the certificate grade taken by Geo. A. Carruthers should be mentioned two amusing slides called "Caught", and "The Professor's Milk".

**Class IV. Athletics.**—Only a bronze medal was awarded to Mr. W. A. Harris. "Cavalry Sports Plaiting a May Pole" was well depicted and another "Putting the Stone" was illustrative of a difficult subject.

**Class V. Marines.**—Was the poorest of the lot, we do not see why Harold E. Brightman was given a silver medal for his six views of Brixham Trawlers. They were very

commonplace and ordinary. In the bronze grade taken by Mr. A. R. Dresser, there was nothing striking. He had a good view of a bedecked Venetian boat.

Class VI. Instantaneous.—The silver medal went to Charles Knight, whose pictures were fair but the most remarkable was one called "Circus", showing a horse in mid air jumping over another horse.

Major J. D. Lysaght taking the bronze, had good hurdle pictures, one illustrating a single stick encounter on horseback. An illustration of a girls' race was also quite good.

Mr. W. E. Cowan took the certificate and had two amusing pictures called "A Duck, Where?", and "I've Got it."

Class VII. Animals.—The silver medal was given to William Greene, and the set included a variety of animals, but his "Zebra Colt" was a striking slide, clear, sharp and well posed. Major J. D. Lysaght took the bronze, and had a fine picture of forty monkeys waiting for the visitor to pass in some nuts; an amusing, but excellent view of two giraffes, and realistic photograph of an immense hippotamus entering his tank bath. A. K. Dresser was awarded the certificate, and had a striking picture of a polar bear and a good photograph of flamingos.

Class VIII. Street Life and Scenes.—Major Lysaght had a fairly good set for the silver medal, an "Ice Cream Cart" in Rotterdam, being exceptionally soft and well taken. Edgar G. Lee was also given a silver medal, and had two striking pictures entitled respectively, "Who Broke the Window," and "Around the Herring Cart." The bronze was awarded to S. G. Coulthurst. In his set were "Light and Shade in the Slums," and "Saturday Afternoon," each showing good grouping.

Following these was Class IX., botanical, exhibiting some fine work, but the maker's name is not known; also Class X., covering scientific and microscopical subjects. Pictures of moths and darning needle flies were very good; also, one of a bee, illustrating in one picture all the stages of development from the egg to the perfected bee. Altogether the set was greatly appreciated, and contained more variety in subjects than has previously been shown.

Messrs. F. C. Elgar and Mr. Grimm operated the electric lantern.

At a former meeting of the Society Dr. John H. Janeway read a paper on the permanence of Gelatino Chloride Prints. The following appeared in a recent English journal: *A Commission of Inquiry into the Permanence of Gelatino Chloride Prints*. A commission is projected whose object shall be to inquire into the alleged unpermanence of gelatino chloride prints, and the causes thereof. M. G. Mareschal, director of the *Photographic Gazette*, 12 Rue Dumois, Paris, is taking the initiative in the matter, and he invites particulars from photographers in France and elsewhere. He rightly says that this question of permanence is one in which all photographers are interested, and he asks his readers to reply to the following questions, engaging that the replies shall be submitted to a commission of photographic authorities who will report their conclusions. 1. State of preservation of print. 2. Method of toning and fixing (separate or combined with formulæ). 3. Times and method of washing. 4. Preparation of paper. 5. Method of mounting and kind of mountant employed. A few pages preceding the above in the same journal appears the following:

*Collodio Chloride*. The stability of prints made by the collodio chloride process has during the past two or three weeks formed the topic of conversation at some of the London societies. At a demonstration of toning and fixing at one of them it was found that the prints on collodio chloride paper resisted the action of the reducing agent better than those on any other paper. At a subsequent meeting of the same society the subject was again brought up and members referred to prints in their possession

that had been done for various periods up to a quarter of a century that show no evidence of fading. At another society the process was classed as the most stable of all silver methods. But you will perceive that no methods as to the toning and fixing are given. The ipse dixit of a society is of no value unless reasons found good are given for the same. Here you will remark are in reality two opposite statements. In one gelatino chloride having for the basis of its emulsion an animal substance, a fact that it may be well to remember, the permanency of which is so much doubted as to authorize an official inquiry. The other collodio chloride, the emulsion basis being of a vegetable origin, is pronounced to be the most stable of all silver processes. Both of these processes you know are included in the name "aristo." As the question of permanency of prints produced by either or both of these processes is deemed to be, for many reasons, of much importance not only to the professional but especially so to the amateur; it would seem pertinent at this time to begin an investigation of the subject.

Dr. Liesgang in 1869 published Surpois' discovery of chloride of silver emulsion and gave the formula for the same. Some very beautiful results were obtained upon paper coated with this emulsion, but the prints were found to be fugitive and the paper difficult to work. In July, 1888, he sent some of his paper aristotype to this country to be printed upon and the prints were published in the *Philadelphia Photographer*, Sept. 1st, 1888. Examination of these prints show that they are far from permanent. I have examined prints on the following paper and with the following results:

Kloro—Gelatino Chloride, made about July, '93;	beginning to go.
Ilo—Collodio Chloride, " " " "	beginning to go.
Omega—Gelatino Chloride, " " " "	beginning to go.
Red Label—Gelatino Chloride " " " "	some slight signs in white light.
Sollo—" " " " " "	gone.
Kirkland's Silver Gelatino " " " " " "	October " out of at least four or five dozen packages at least half were more or less affected, some very badly.

All of these prints were from the publishers and the claim cannot be advanced that they were produced by inexperienced hands. The above will show that prints made by either of these processes can not be pronounced to be absolutely permanent, as many of them deteriorate in a little over a year—some less. The questions to be solved in order to discover the cause or causes of this rapid decay are. 1st—In the case of the gelatino chloride is it the gelatine basis of the emulsion upon an absorbent support that continues a decomposing action set up, by to us, as yet an unknown agent of decay. Is this not a question for microscopical investigation, or does the gelatine in swelling absorb and embrace noxious agents in the bath to be released afterwards in unfavorable circumstances—by chemical investigation.

2. The method of toning and fixing. Separate or combined baths.—For my own self I am a firm believer in the use of separate baths, believing that what is worth doing should be done well. The combined bath is no new thing. The bath at its best is, in almost every case, but an excuse for a lazy man. Is it reasonable to risk, for the sake of saving a few minutes, the results of what may have taken hours to obtain? and the risk becomes a certainty when we use many of these combined baths, compounded in violation of all chemical reactions and resultants, fitly called by one, "chemical slush."

The tone to be given.—In almost every case when the print showed no commencement of decay the tone produced was what is called photographic black, and,

singularly enough, but a few days ago, looking over *Snelling's Magazine*, published thirty or more years ago, I read this remark of his, writing about the fading of silver prints, and deprecating the introduction of the English tones of brown, etc., "that the prints toned black resisted fading almost entirely," whilst the browns, etc., rapidly give way.

The method of washing should be investigated, whether prolonged too much or not enough. Care in handling and unnecessary exposure of the paper before, during and after printing.

**MOUNTS, MOUNTING AND MOUNTANTS.**—Do the chemicals used in producing the various colors for cards have any injurious effects upon the prints? There seem to be very good reasons for saying that they often do, especially the maroons and chocolates.

The method of mounting should be inquired into, and the mountant scrutinized carefully.

But until these prints can be pronounced to be permanent, why should the amateur, especially, waste his time and money upon a fleeting thing? Why not employ those processes known to be permanent, the carbon or platinum, both giving results not to be despised; on the contrary, the most pleasing that can as yet be obtained?

## Bromide Paper Coating Machinery Patent Litigation.

Quite an extensive suit over patents on machinery for coating paper with gelatine or collodio silver emulsion, is now on. The following is an extract from the *New York Sun* on the subject:

"According to the story told by those who represent the Eastman Company, none of the bromide paper was made in this country before 1885, and but little was used. What little there was in our markets came from England and France. This was all prepared in single sheets, and the process was both difficult and unsatisfactory. About this time Mr. Eastman began his experiments in making it. The only way to prepare the paper then was to take the single sheets, float them upon a pan full of the warm gelatine emulsion, drain them as well as possible, and hang them to dry by the corners. The sensitive character of the paper made it necessary to carry on the process in a dark room, and the crudeness of the process led to loss and bad results. Considerable of the silver emulsion was lost in the draining; there were finger marks on the edges and corners of the paper that had to be cut away, leading to waste; the emulsion did not spread and dry evenly, and the moving around of the operatives in the room set dust a-flying which, when it settled upon the paper, made comet-like trails and ruined it for fine work. The emulsion, too, suffered if it was kept heated for too long a time, and it had to be heated during the continuance of the work in order that it should flow evenly.

The first attempt to improve upon this manner of doing the work was made by pasting together sheets of paper into a band eight or ten inches long and passing this band over the emulsion with a hand machine something like a wringer. This led to the final building of a machine in which the whole operation was carried on without the intervention of a single hand after the paper and the emulsion were once in place.

In this machine the paper is taken from a roll, and is, perhaps, 2,500 feet long and 2½ feet wide. From the roll it goes through two feeding rollers, down around a third roller, which is nearly half submerged in the emulsion, then directly up over another roller, along on the level to another, down now to still another roller, along under the pan to another roller, up again, and then across the top of the machine once more to where it is caught in a drying machine, like those used in wall paper factories, which hangs it in long loops and leaves it there until the operators come to remove it. The things which it is claimed this machine does are as follows: First there is the clipping of the paper. By carrying it under a smooth-faced roller, the edge of the paper forms a dam, and none of the emulsion gets under it, or on the wrong side. Then the paper being first carried up and afterward down, the emulsion is spread evenly all

over by the time it gets cool and sets. All of the moving of the paper is accomplished by having each of the rollers driven. As these rollers move faster than the paper does, they take out any stretch that it might show when it gets wet in the emulsion, and as they are all smooth-faced, they keep the paper always smooth, and leave it so. The machines and processes used by the other manufacturers have not enough differences for the layman to distinguish them, but perhaps the patent lawyers will find sufficient ground to invalidate the Eastman patents.

Eastman carried on his work of paper making as a secret process until March, 1887, when he took out the patents for which he had applied in October, 1884. The occasion for this step seems to have been the fact that one Cassett, who knew all about his machine and process, left him and began making paper for Anthony & Co. E. & H. T. Anthony & Co. is the oldest and largest house in the United States that deals in photographic goods. They claim to have put Eastman into business originally when he gave up being a bank clerk and began making dry plates. In 1881, they say, one of their employees, T. C. Roche, invented and patented the application of the bromide emulsion to paper, and as it was pretty nearly the same thing that Eastman was using on the glass for dry plates, they got him to prepare the paper for them. Pretty soon he began to sell it to others as cheap as he did to them, and then they began to make it themselves. They were sued by Eastman in 1887 and agreed not to use the Cassett machine, which was made after the pattern of Eastman's. They substituted a driven roller covered with rubber and went ahead. The Blair Camera Company was afterward sued. While this suit was pending a stipulation was made by counsel which admitted that the construction of the Blair company's apparatus was virtually the same as that covered by the Eastman patents. It was said by persons interested in fighting the patent that this stipulation was brought about by an understanding on the part of Mr. Blair and Mr. Eastman that they should combine their interests, sustain the patents, and make every one else pay tribute. It is understood also that the Eastman people will deny this. Those who are now fighting the Eastman patents allege that their machine is not an infringement, while at the same time they also deny that the Eastman device or process contains anything which was both new and useful.

In the recent part of the contest the fight got hot. The Hoover & Getz people denied that they used smooth-faced rollers in their machine, but at the same time they refused to submit the machine to inspection on the ground that they had some new things in it which they did not wish to make known. The Eastman people hired detectives, who finally induced an employee named Mollie Stevenson first to describe the machine and then to let in a draughtsman named Henry, who made drawings of the machine. This girl and Henry afterward testified that the feed roller in the machine was a smooth roller. Mr. Hoover had already testified that he had covered it, eighteen months before, with carding cloth, a leather belting filled with double-pointed wires. The Hoover & Getz lawyers at once applied for a warrant for the arrest of Mollie Stevenson for perjury, and the other side had R. A. Anthony and Mr. Hoover arrested for trying to intimidate her. The arrests took place in Buffalo, and the cases are to come up before Commissioner Fairchild at Buffalo.

The result of these cases will have but little interest except for the few who are personally concerned, but the outcome of the main suit will be watched with concern by every one who uses bromide paper in either of its forms. When the suit was begun there was another manufacture which seemed of great importance, and which could be carried on only by means of the machine. This was the stripping film rolls. This, however, has been replaced by the celluloid plates and rolls.

[NOTE.—As regards the actual beginning of the manufacture of bromide paper in this country one of the editors recollects that Mr. Eastman undertook to make it for Messrs. Anthony & Co., especially for Mr. H. T. Anthony sometime in the spring or summer of 1881, not in 1885, as stated above. The coating of the paper was very imperfect, generally light streaks appearing diagonally across each sheet, when developed, making it practically unusable.—EDDINGS.]





## UNITED STATES PHOTOGRAPHIC PATENTS.

*October 8, 1893.*

- 505818. Camera. E. R. Bullard, Wheeling, West Virginia.
- 505872. Frame for Pictures or Cards. H. Bierderman, New York, N. Y.
- 505968. Photographic Background. J. H. Titus, Tarentum, Pa.
- 506025. Photographic Posing Chair. J. Winter, Sr., Syracuse, N. Y.
- 506109. Half-Tone Negatives for Photo Processes. F. J. M. Gerland, Bayonne Jersey City, N. J.

*October 10.*

- 506210. Roll Holder Camera. R. J. De Barrill, New York.
- 506843. Photographer's Changing and Developing Box. J. F. Snapp, Garza, Texas.

*October 17.*

- 506873. Rack for Displaying Photographs. T. E. Wood, Kalamazoo, Mich.

*October 31.*

- 507529. Picture Exhibitor. R. K. Doe, Duluth, Minn.
- 507785. Apparatus for Automatically Displaying Pictures. G. Cook, London, Eng. and C. K. Marr, Glasgow, Scotland.
- 507790. Camera Shutter. E. Decker, Cassopolis, Mich.
- 507805. Camera Stand. J. H. Green, Ishpeming, Mich.

*November 7.*

- 508204. Photographic Plate Holder. E. R. Bullard, Wheeling, West Virginia.
- 508319. Tripod Head. J. F. Ivanson, Boston, Mass.

*November 21.*

- 509120. Process of Making Relief Plates. J. F. Earhart, Cincinnati, Ohio.

*November 28.*

- 509611. Magazine Camera. L. and A. Chronik, Brooklyn, N. Y.
- 509698. Panoramic Camera. R. W. Stewart, Devonport, England.
- 509721. Photographic Retoucher. J. R. Dake, Medford, Wis.
- 509841. Photographic Camera Shutter. H. Casler, Syracuse, N. Y.

*December 5.*

- 510098. Paper Coating or Enameling Machine. W. Sparks, Brooklyn, N. Y.
- 510871. Photographic Printing Machine. C. Van Buskirk, Boston, Mass.

*December 12.*

- 510758. Method of Photogrammetry. C. B. Adams, Augusta, Georgia.
- 510759. Aerial Camera. C. B. Adams, Augusta, Georgia.
- 510805. Photographic Camera Shutter. W. H. Lewis, Huntington, N. Y.

*December 19.*

- 511043. Camera Stand for Bicycles. C. H. Campbell, Ocala, Florida.
- 511183. Photographic Camera. J. Fretwell, Providence, R. I.

*January 9, 1894.*

- 512333. Background Carriers for Photographers. M. M. Simmer, Henderson, Minn.
- 512512. Panoramic Roll Holder Camera. P. S. Marcellus, Philadelphia, Pa.
- 512601. Camera Shutter. H. B. Carlton, Rochester, N. Y.
- 512655. Photographic Camera Shutter. W. H. Lewis, Huntington, N. Y.
- 512671. Photographic Camera Shutter. C. W. Eddy, Ware, Mass.

*January 16.*

513914. Photographic Plate Holder. O. C. Spalsbury, East Orange, N. J.  
513058. Combined Cane and Camera Tripod. Bessie Rahmer, New York, N. Y.

*January 23.*

513149. Combined Photographers' Bath and Printing Frame. F. Sandeman, London, England.

*January 30.*

513517. Photographic Printing Frame. C. E. Lewis, Alma, Mich.

*February 13.*

514603. Photographic Embossing Press. D. D. McKee, Anderson, Ind.  
514707. Magic Lantern. G. E. and V. H. Emerson, Newark, N. J.

*February 20.*

515080. Photographic Vignetter. H. L. Hultgren, Chicago, Ill.  
515230. Photographic Camera Shutter. S. C. Jones, Rochester, N. Y.

*March 6.*

516076. Coin-Controlled Photographic Apparatus. J. W. Burton, Cleveland, Ohio.

*March 13.*

516278. Apparatus for Photographically Recording Time, Position and Speed. W. C. Petri, Wichita, Kansas.

*March 20.*

516861. Means for Regulating Rays of Light Passing Through Photographic Lenses. J. W. Fawcett, St. Kilda, Victoria.

*March 27.*

517119. Photographic Background Holder. C. O. Johnson, Sioux City, Iowa.  
517164. Photographic Camera Shutter. W. L. Lightford, Indianapolis, Ind.  
517360. Tripod on Support for Cameras. E. W. Perry, Jr., New York.  
517364. Skylight for Photographic Galleries. W. Shaw, H. Shaw and J. Shaw, Jacksonville, Florida.

*April 3.*

517444. Support for Cards, Pictures or Like Articles. S. Dalsheimer and A. Greenleaf, Baltimore, Md.  
517539. Camera. H. Casler, Syracuse, N. Y.  
517733. Photographic Camera Multiplying Attachment. D. S. Cole, Washington, Iowa.

*April 10.*

517870. Lime-light Apparatus. W. Lawson, Newton-le-Willows, England.  
518073. Stand for Photographs. A. D. F. Randolph, New York, N. Y.  
518074. Photographic Dark-Box. A. D. F. Randolph, New York, N. Y.  
518075. Photographic Developing-Tray. A. D. F. Randolph, New York, N. Y.  
518104. Stereopticon. E. Hudson, Washington, D. C.

*April 17.*

518346. Photographic Album. J. Ekval, Fargo, N. D.  
518372. Registering and Marking Apparatus for Photographic Film Holders. H. Mackenstein, Paris, France.

*April 24.*

518802. Roll Holder Camera. E. B. Barker, Newark, N. J.  
518929. Photographic Printing Frame. R. M. Hunter, Philadelphia, Pa.

*May 1.*

519247. Camera Shutter. L. F. Eiden, East Warren, Pa.  
 519276. Magazine Plate Holder. A. Stegemann, Berlin, Germany.

*May 8.*

519645. Photographic Plate. T. C. Roche, Brooklyn, New York.  
 519646. Photographic Plate. T. C. Roche, Brooklyn, New York.

*May 15.*

519800. Photographic Vignetter. J. B. Walker, Kansas City, Kan.  
 519872. Coin Controlled Photographic Apparatus. J. A. Parsons, Rocky River, Ohio.

*May 22.*

520034. Photographic Camera Multiplying Attachment. D. S. Cole, Washington, Iowa  
 520058. Lamp Sketching Camera. C. R. Jenne, Fort Wayne, Ind.  
 520198. Photographic Shutter. H. R. Turner, Rochester, N. Y.  
 520290. Photographic Plate Holder. E. R. Barker, Newark, N. J.

*May 29.*

520696. Camera Shutter. W. J. McCollom, Swededale, Iowa.  
 520707. Art of Reproducing Objects in Relief or Intaglio by the Aid of Photography.  
 M. Russo, Rome, Italy.

*June 5.*

520950. Camera. T. M. Clark, Newton, Mass.  
 520953. Picture Exhibitor. J. E. Ecklund, Rockford, Ill.  
 520972. Photographic Camera Shutter. A. T. Tisdell, Brooklyn, N. Y.  
 521064. Method of and Lens for Making Photographs. H. Van de Weyde, London,  
 England.

*June 12.*

521362. Electric Arc Light for Magic Lanterns. C. Beseler, Jersey City, N. J.

*June 19.*

521563. Roll Holding Camera. A. Delug, Stuttgart, Germany.  
 521569. Photograph Album. G. Koll, New York, N. Y.  
 521659. Screen for Half-tone Process. M. Levey, Philadelphia, Pa.  
 521668. Photograph Display Cabinet. H. W. Potteliger and W. A. Kohman,  
 Reading, Penn.  
 521705. Process for Producing Positive Phonoscopic Plates. G. Demeney, Paris,  
 France.

*July 3.*

522372. Apparatus for Retouching Negatives. C. Hornberger, Harrisonville, Mo.

*July 10.*

522921. Magazine Photographic Camera. G. P. Spooner, Bron-y-Garth, England.

*July 24.*

523323. Photography by Artificial Light. B. M. Clinedinst, Washington, D. C.  
 523386. Panoramic Camera. F. F. Dumke, Milwaukee, Wis.

## July 31.

*Design Patent* 28518. Photographic Card Mount. J. P. Odgers, Philadelphia, Pa.

## August 7.

524142. Photographic Camera. J. C. Hegelein, New York, N. Y.

524143. Camera Shutter. J. C. Hegelein, New York, N. Y.

## August 14.

524301. Lantern Slide Mat. R. S. Benedict, New Orleans, La.

524670. Iris-Diaphragm Shutter. P. Rudolph and O. Nather, Jena, Germany.

## August 21.

524726. Device for Cutting Cards with Beveled Edges for Photograph Mounts.  
B. McHugh, Ottawa, Canada.

524803. Magazine Camera. A. A. Foiret, Nice, France.

524949. Magazine Camera. J. F. Parsons, Bristol, England.

## August 28.

525238. Photographic Camera. J. Tascher, Chicago, Ill.

525239. Magazine Camera. J. Tascher, Chicago, Ill.

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## Editorial Table.

**THE PHOTO AUTO-COPYIST.**—From the Autocopyist Company, 72 London Wall, London, E. O., England, we have received examples of prints made by this process in printing ink. Very fine tools and materials are required, and the process is quite easy to work. The *British Journal of Photography* thus describes it:

"A sheet of vegetable parchment, covered with a layer of gelatine, is cut to the size of the printing frame, and sensitized in a weak solution of bichromate of potash, the strength of the bath varying from 2 per cent. in summer to 3 per cent. in winter, according to the temperature. To the bath a few drops of ammonia should be previously added. The sheet is allowed to remain in the bath for three minutes, until it is turned a bright yellow. It is then removed, squeezed down to glass, and dried in the dark. The time of drying varies, but the demonstrators recommend the sensitizing over night, so that the film will be ready for using next morning, when it is stripped from the glass and exposed in an ordinary frame behind the negative. The action of light renders the film hard and insoluble beneath the clear portions of the negative, and turns the film to a brown color, hence printing is not a difficult matter. When all detail is out, the film is reversed, so that the light may harden the back of it. It is then soaked in water for two hours. The bichromate is washed out of the portions unacted on, which swell and give an embossed appearance to the film, the parts acted on being sunk into the gelatine. The film is then softened with a solution of water, gelatine and ammonia, which is poured off and the film dried with a cloth. Inking takes place with ordinary lithographic ink by means of rollers, a stiff ink being used for the dark shadows, and a thin ink for the light half tones, etc. Any color, or mixture of colors, may be used by varying the tint of the ink, which only adheres to the portions affected by the light. After inking, a sheet of paper is laid on the film, and inserted in an ordinary copying press. Pressure is applied in the ordinary manner, and the process repeated *ad lib.* The price of the apparatus is exceedingly moderate, being only £3 for half plate, which may be recommended to photographic societies for circulating copies of medalled pictures, etc."

The pictures do not possess the brilliancy of silver prints but are very good as copies.

*"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 46, vol. 14.*

**MINIM**—Lat. Minium, Smallest—The smallest liquid measure apoth.=1 grain.

**MIRROR, REVERSING**—A mirror so placed that by its means the reflected image, and not the object itself, is photographed directly as reversed. The increasing employment of reversed negatives for the carbon, artotype, asphaltum and other processes renders its use a necessity.

**MIRRORS, SILVERING OF**—See Glass, Silvering of.

**MODEL, STUDY OF**—The photographer's first care should be the study of his model before placing it under the objective's inflexible and undiscriminating eye. Here begins the role of light, with the infinite gradations by which it can indicate form. It is, therefore, of the utmost importance to comprehend the characteristics of the model, and how they may be best rendered so as to modify the action of light, and thus secure in the portrait suggestions of the true type and character of the sitter.

**MOISTURE as a lubricator**—Those burnishing or having prints burnished by the modern rotary burnisher will find that the natural moisture of the freshly mounted prints adds greatly to its finished appearance, acting, as it does, the part of a lubricator, and it is all that is needed by these perfect machines, which neither soil the card nor remove the retouching or spotting out, so often found necessary to make the print appear at its best. Amateurs who are unable to mount, spot out and burnish all in the same day, and thus allow the print to become dry, can overcome this difficulty by using sweat box, which can be made of a fairly light tin cake or cracker box, of suitable size, by placing well-soaked blotters or cloth in the bottom, with two or three thin strips of wood laid over as a floor for the prints to rest on. A light wooden frame, fitted inside near the top, with cords run across like the strings on a harp, will assist in keeping the mounts in an upright position, and each by itself. The prints should be wiped off with a soft, damp cloth, to remove any paste that may adhere to their faces; then, after spotting out as needed, place them in this sweat box a day or a night at least before burnishing longer will do no harm, if properly mounted.

**MOLYBDIC ACID**—See Acids—It has been lately recommended as a bleaching agent. Guignot has used it for that purpose, and found it to be a good solvent of Prussian blue.

**MOLYBDATE OF AMMONIA** is also a good solvent for Prussian blue. The compound produced by dissolving molybdic acid in a hot solution of oxalic acid—oxalo-molybdic acid  $C_2H_2O_4$ ,  $MoO_3 + H_2O$ —is said to be sensitive to light in a peculiar fashion. The best mode of observing the action of this new substance is to spread it upon paper, and allow it to become apparently dry. Exposed to the sun, a blue color is produced. It is said that a print in indigo can be made by immersing a sheet of paper in a saturated solution, allowing it to dry in the dark. This placed under an average negative will yield a clear print in blue, sharp and distinct, in about ten minutes. If the print is placed in water, it rapidly disappears, but the image may be preserved by exposing the print to gentle heat. When it comes out of the same, the blue color is displaced by a black, which appears to be permanent.

**MONOCULAR VISION**—A single eye sees most distinctly any point situated on its optical axis, and less distinctly other points also toward which it is not directly looking, but which still are within its circle of vision. It is able to judge of the *direction* of every such point, but unable by itself to estimate its *distance*. Of the distance of an *object* it may, indeed, learn to judge by such criteria as loss of color, indistinctness of outline, decrease of magnitude, etc., but if the object is near, the single eye is not infallible even with these aids.

**MOON, Photographs of**—The new lunar photographs of the Henry Brothers, made by the aid of their photo-equatorial of 33 cm. aperture, the same which they will employ in their work of making a star map. A reproduction of an engraving shows one of the most interesting regions of the moon, and includes, among others toward the center, the three enormous volcanoes, Catharina, Cyrius and Theophilus, as well as the curious formation in the vicinity of Agrippa. The study of the surface of our lunar satellite has always excited, to the highest point, every one's curiosity. As a matter of fact, the moon presents, from the geological point of view, astonishing details. There are considerable chains of mountains, craters of a peculiar and very characteristic aspect and openings in the surface in certain localities. It is interesting in this connection to note that the best negatives of the moon, up to within a very short time, have been conceded to be those made in New York by Rutherford more than twenty years ago.

**MOONLIGHT PHOTOGRAPHY**—Up to within a few years moonlight photography was considered an impossibility, but, since that time, it has been demonstrated that it can be done, and remarkable results accomplished. Either daylight clearness or moonlight effect can be obtained by lengthening or shortening the exposure. About three hours with a medium stop is required at full moon to give the daylight clearness, and two hours full moon for moonlight effect. Moonlight effect, first quarter, three hours; on light colored scenery, first quarter, two and three-quarter hours.

**MOUNTANT**—Any substance employed to cause the print to adhere firmly to its support. It is a *sine qua non* that there should be a perfect freedom from acidity in it. A very slight trace of it will cause a destruction of the image sooner or later. It should also be so prepared as will prevent the formation of fungi. There are several kinds in common use—starch paste, arrowroot, caseine, mucilage, dextrine, India rubber (gum) solution, glue and gelatine. *Starch Paste*—Pour cold water upon good laundry starch to barely moisten it, then stir in boiling water until proper consistency is reached. Strain, if not free from lumps. Remember that starch paste should be freshly made for each batch of prints, and for a small batch, is as good as any other mountant. Another: Allow 4 parts by weight of hard gelatine to soften in 15 parts of water for several hours and then moderately heat until the solution is quite clear, when 65 parts of boiling water should be added while stirring; stir in another vessel 30 parts of starch paste with 20 of cold water, so that a thin, milky fluid is obtained without lumps. Into this the boiling gelatine solution should be poured while constantly stirring, and the whole kept at a boiling temperature. When cool add to the whole 10 drops of carbolic acid, which prevents acidity. This makes a very tenacious paste. *Arrowroot*—Arrowroot 10 parts, water 100 parts, gelatine 1 part, alcohol 10 parts. Soak the gelatine in water, add the arrowroot, which has first been thoroughly mixed with a small quantity of water, and boil for four or five minutes. After cooling, add the alcohol and a few drops of carbolic acid. Another: Best Bermuda arrowroot  $1\frac{1}{4}$  ounces, sheet gelatine or best Russian glue 80 grains, water 15 ounces, alcohol 1 ounce. Put the arrowroot into a small pan, add 1 ounce of water, mix it thoroughly with a spoon or an ordinary mounting brush until it is like thick cream, then add 14 ounces of water and the gelatine broken into small fragments; boil for four or five minutes, set aside until it is partially cold, then add the alcohol and 6 drops of pure carbolic acid. Be very particular to add the alcohol in a gentle

*To be continued.*

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## SALE AND EXCHANGE.

[This department is for the benefit of SUBSCRIBERS who have photographic material, apparatus or books which they wish to exchange, and such wants will be inserted free of charge one time. For each additional insertion we will charge one dollar per month. Dealers advertising in these columns will be charged double our ordinary advertising rates.]

**Wanted**—A 5x7 Roll Holder for a No. 2 Folding Hawk Eye. Address J. G. Stoerr, 8125 Portland Ave., Louisville, Ky.

**For Sale**— $3\frac{1}{2} \times 8\frac{1}{2}$  Bullseye Camera, in perfect condition, \$4.50. I want a first-class 8x10 View Outfit, and will give in exchange, Homing Pigeons, Fancy Pigeons, Fancy Rabbits or Fancy Poultry. I also want a good 5x7 Hand Camera, in good order. Correspondence solicited. Robert Halford, Sanford, Me.

**Exchange**.—Will exchange complete Ferrotypes Outfit ( $4\frac{1}{4}$  plate lenses, &c.), for Lantern Slides in good condition. Write for particulars. Jacob Harvey, 610 East Avenue, Roanoke, Va.

**For Sale**—A 5x7 No. 5 Folding Kodak, with Roll Holder and Plate Holders, Tripod, etc., etc., fine condition. Samuel F. Owen, Saginaw, Mich.

**A New Platinotype Card Mount**. "The Davison" (registered), well adapted to all Photographs. Send for sample. Willis & Clements, 1624 Chestnut St., Philadelphia.

**Wanted**—A brown duck photo tent in good order. State size and lowest price, or would exchange \$36.00 Cincinnati Camera Box. Jacob Harvey, 610 East Avenue, N. E., Roanoke, Va.

**For Sale**—I have 4x5 Blair Camera B. & L. shutter, 2 lenses, 12 plate holders and developing outfit for sale cheap for cash. Also No. 8 kodak. Walter Kimbark, 80 Michigan Ave., Chicago.

**For Exchange**—Self Inking Excelsior Printing Press, No. 4, cost \$44.00, been used but little, for 5x7 View Camera with Lens and Tripod. Correspondence solicited. E. H. Newbury, Lock Box 5, Mystic, Conn.

**For Sale**—No. 5 Kodak, 5x7 folding, latest model, absolutely perfect, cost \$75.00, will take \$57.50, has B. & L. Shutter, R. R. Lens, glass plate attachment. Address, H. J. Holthoefer, 2736 South Park Ave., Chicago.

If you wish to counteract the poor light of this season of the year, use the Cramer Crown, the quickest plate made. When the ground is covered with snow use the Cramer Non-Halation Plate. They are single coated, easy to work and applicable to all cases where objects having strong contrasts are to be photographed. Send for the new Catalogue containing new formulas and other useful information. G. Cramer Dry Plate Works, St. Louis, Mo.

**Wanted**—A  $3\frac{1}{4} \times 4\frac{1}{4}$  in. plate, Anthony's Bicycle Camera, for cash or exchange for Queen's slide tube Microscope, three objectives, about 40, 100 and 200 diameters, in rosewood box. J. Siler, 1006 S. 7th St., St. Louis, Mo.

**For Sale**—A Laverne 4x5 combination lens with Iris diaphragm and registered shutter. Lens in perfect condition. Original price \$40. will sell for \$23. Frederick Earle, 1680 N. Cascade Ave., Colorado Springs, Colo.

**To Exchange**—A gold pen with ebony holder for anything in the photographic line if satisfactory. If you have anything to trade write me. W. F. Jackson, Mayfield, Mich.

**For Sale**—A Double Symmetrical Lens of leading European manufacture, the best lens in existence for 5x7 Hand-Camera. Will cover with smallest stop  $6\frac{1}{4} \times 8\frac{1}{4}$  plate perfectly. Instrument brand new and in perfect order. Need the money and will sell for half price—\$20.00. Address D. C. W., Box 1522, Boston, Mass.

**For Sale or Exchange**—A 10 in. Entreklin Burnisher, Oil Heater, accurate rotary (double roll), cost \$25.00, will sell for \$12.00, is almost new. Also an 8x10 Portrait Lens, cost \$50.00, sell for \$15.00. Also an 8x10 Blair Extension to fit a 5x7 camera, has two holders, has never been used, cost \$10.00, sell for \$7.00. Would exchange for an 8x10 View Camera. Address, L. B. Shaw, Elmwood, Mass.

**For Exchange**—A Kamaret in perfect order having been but little used. Price \$40.00; will exchange for 5x7 Premier, single lens, or other good 5x7 hand camera; or will sell for \$25.00. Address E. J. Farnsworth, 26 Elk St., Albany, N. Y.



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# THE AMERICAN AMATEUR PHOTOGRAPHER.

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## A Photographer Among the Thlinkets.

BY ARTHUR INKERSLEY.



SAGINAW JAKE.

THE Alaskan tourist steamers usually proceed directly from Chilcat, the most northerly point reached, southward to Glacier Bay; but, on my first visit, the weather being foggy and unfavorable, the trip to the Muir glacier was deferred, and we put into Freshwater Bay to await a clear sky. Here a noisy stream comes rushing down over rocks and boulders from the mountains and affords a grand opportunity for trout fishers. Dull and damp though the day was, some enthusiasts went ashore, and were rewarded by a good catch of fish.

On the first visit I saw very little of the beauties of Freshwater Bay, but some days later we returned thither on a delightfully mild and bright morning. The ship's boats took us ashore, where we found on the banks of the trout stream a cannery and a rude Indian settlement. The latter was not a permanent village, but a mere summer encampment for the purposes of hunting and fishing, and it presented an even more temporary and tumbledown appearance than usual. There were a few shanties of wood or bark, but for the most part the natives seemed content with the shelter afforded by throwing blankets and old garments over a rough framework. The broken water below the fall was full of trout, and soon almost everybody was fishing with a rod or an improvised pole. Salmon-roe was the favorite bait, and many ladies joined in the sport. The fish were of three varieties—salmon-trout, brook-trout and sea-trout. One of the young ladies of the party, a Miss Shaw—I have her special permission to give her name—of Dayton, Ohio, caught fourteen fish during the morning, and hooked many more, which she failed, owing to the lack of a landing-net, to secure. Another young Scotch lady waxed so enthusiastic that she refused to leave her fishing to have her photograph taken. A Princeton under-graduate who had a kodak camera secured several portraits of Indians before they knew what he was doing, but at last an old Indian, one of whose wives was about to be photographed, became either

really or feignedly angry, and fetched a shotgun, at sight of which all the young ladies of the party scattered quickly.

Above the stretch of tumbling water where the anglers were engaged was a pretty fall of some twenty feet or so in height, up which the salmon were constantly trying to swim. They were wonderfully strong and plucky fish, and made the most gallant efforts to overcome the obstacle. An Indian waded into the water at the foot of the fall with a long pole with a hook at the end, and soon raked out some large fish. Having caught three or four in the most matter-of-fact indolent manner, he returned to dry land, and coolly replaced his nether garments in full view of every one. While returning to the boat I saw a group of Indian women squatting on the ground in a semi-circle, and, by a stratagem, managed to secure their "counterfeit presentments" on a photographic plate. The girls of our party engaged the women in conversation—if that can be called conversation where neither party understands what the other says—and made a sort of screen for the camera. When the focussing had been done, the girls stood aside, and in a couple of seconds the group was "caught." I also secured a successful group of the girls sitting in a canoe drawn up on the beach.

Behind the little settlement grew a dense forest, through occasional openings in which we discerned the towering shapes of snow-capped mountains and the glint of glaciers. In a lovely spot thickly shaded by forest cedars is the grave of a young Englishman, a seaman who died on board the U. S. S. Saranac.

In the afternoon we sailed off and toward evening found ourselves in a sheltered bay, on the shores of which a village called Hoonah is situated. The houses are well built of strong boards, and some had the round entrance found in the older Indian dwellings. At the end of a strip of beach along which grew a good deal of wild wheat were the Mission school and the missionaries' house. Mr. and Mrs. MacFarland are in charge of the Mission, and we were kindly invited into their house, the little sitting-room of which was crowded with guests. An Indian girl played the harmonium and sang hymns for us. On the walls of the room I noticed a copy of Sir John Millais' "Cinderella," the original of which I had seen on the walls of the Royal Academy at Burlington House several years ago. No wonder that thousands upon thousands of copies of the Christmas number of the Illustrated London News are sold when pictures culled from it are found in spots so remote as Hoonah! Over the missionaries' house are the church and school-room. The Hoonah Indians number nearly a thousand, and live on each side of Cross Sound. On the shore opposite to us there was a large settlement, but, as we must have taken a canoe to get there, we did not visit it. Mr. and Mrs.

MacFarland have had wide missionary experience in Alaska and elsewhere, but at Hoonah they find their difficulties much increased by the fact that the Indians go away in large numbers in the summer for hunting and fishing. Mr. MacFarland then follows them in a canoe, and tries to keep up his influence over them.

As we strolled back from the mission-house, we saw a totem-pole, of no great height, but well colored; also a wooden framework with totemic designs. Behind the houses were some Indian graves, and little canvas coverings concealed charred remains of bodies which had been quite recently cremated. One house was decorated with two masks hung downwards, one on each side of the door. On some houses were curious inscriptions, like signs, giving the name of the owner and stating that he was "a good Indian."

While we were studying Indian life on shore, our fellow-passengers who had remained on the ship were bargaining with the natives for curios, and one bought a box taken from a Shaman's grave. The Indian who had the box demanded a hundred dollars for it, but the wily purchaser held off until the ship was about to start, and then bought it for twenty dollars. We supposed that the Indian was afraid to return to shore with the box, lest he should get into serious trouble for the sacrilege of robbing a Shaman's sepulchre. The box when investigated turned out to contain a Shaman's necklaces and rattles, scalps, and a quantity of ashes and other matters more curious than useful or pleasant. However, after all the rubbish had been heaved overboard, our astute fellow-passenger who had proved himself so clever a bargainer, considered that he had secured about a hundred dollars' worth of curios.

Leaving Hoonah on a Saturday night we put into Bartlett's cove on Sunday evening. Here we found another cannery, under the supervision of a Captain Johnston, to whom I had a letter of introduction; but a cannery is rarely to be seen in operation at the time of the arrival of a steamer, for then all hands are required to get the freight consigned to the cannery off the steamer, and to place on board the cases of canned salmon which have been gotten ready for shipment. Indians came off in canoes to the ship, and offered for sale baskets, bags of skins, with the hair or fur stripped off, and other things.

I went ashore, and, as I was anxious to secure a basket or two, I looked into every hut, and found some of them well built of logs with moss stuffed into the chinks between the timbers. The fire is lighted on the floor in the center of the huts, in several of which salmon was being cooked, the fish being supported on sticks on the side of, and not *over* the flames. On a framework overhead hung split salmon being dried for winter use. Some of the huts were so crowded with drying fish that

there was hardly room to enter, and it was impossible to stand upright without knocking one's head against fish. In a house near the end of the beach I found three baskets carefully wrapped up, which were held at what seemed to me a stiff price, \$3 each. I got the interpreter, Mr. George Kostrometinoff, to negotiate with the owner, but eventually she got the price she asked. As a rule Indian traders have their price for their goods, and will not budge from it, being in this respect very unlike Italian or Egyptian traders, who systematically ask much more than they expect to get, and with whom it is absolutely necessary to bargain or be grossly cheated. Among the things offered for sale here were hats of basket-work, dirty and musty, portions of necklaces and rattles, small powder-horns, awls with handles of mountain-sheep horn, bags and purses of skin, and horn spoons.

#### AN ALASKAN LADY

We saw here several women with their faces blackened with a mixture of lampblack and oil, said to be beneficial in preserving the complexion from the roughening and hardening effects of exposure to sun and salt air on long canoe-trips. Perhaps it may be the recognized mode of concealing the ravage of time upon the face, for I observed that the older women only employed it. Be the object what it may, it produces a sufficiently hideous effect, and must aid much in protecting the virtue of the frail against the gallantries of white men at any rate. There was a very pretty half-breed young woman, just married to a Juneau Indian; her complexion was so rosy and her skin so fair that one would hardly have supposed her to be Indian at all. She and her husband were passengers

on board the "G. W. Elder," and got off at Hoonah to call on some native friends.

Altogether Hoonah left a pleasant impression. In some of the houses were nice pieces of furniture, beds with clean linen, crockery, tea-pots and other appliances of civilization. On the beach were drawn up some large canoes, built on graceful lines. The foreman of the cannery invited us to a little room in his house, and gave us a drink of what must, I fear, have been smuggled whiskey. Near the house was a little pool, the home of several tame sea-gulls, who manifested the greatest pleasure at being called and petted.

Another interesting Indian settlement and trading-post is Killisnoo, the headquarters of the Northwest Trading Company, of which Mr. Karl Spuhn is the local manager. It is on a small island called Kennasnow which lies near to Admiralty Island. It consists, like most villages of South-eastern Alaska, of a line of frame buildings and log huts along the beach, with a background of dark-foliaged forest trees, between which and the village intervenes a strip of ground covered with the stumps of trees that have been cut down for fuel or building material. The Indian name Killisnoo means "breaker of the wind," and arises from the fact that the village is built upon an island which breaks the force of the prevailing wind. The only highways in Alaska being the innumerable bays and arms of the sea, steam launches furnish the only means of communication between the scattered settlements. We saw three launches at Killisnoo, the largest of which belonged to the Northwestern Trading Company.

INDIANS WEARING DANCE BLANKETS.



Some of our passengers went off in one of these to fish at the Lagoon, where they had very good sport, their catch being estimated at seven hundredweight

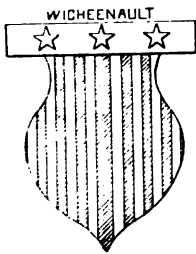
The waters of the neighboring inlet abound in herring, which are taken from the middle of August to the end of December. In early times the natives were wont to catch the herring by dragging through a shoal of fish a board through which long nails had been driven, but this primitive method is now supplanted by the use of boats and improved appliances. The flat-bottomed scows used have a large rectangular opening into which the fish are thrown. When the boats come in, the fish are hauled up into a large wooden trough supported on heavy posts, and from the trough they are dropped into the cars which convey them to the factory. Each barrel of herring is said to yield three gallons of oil, and in 1885 the catch was a little over 86,000 barrels, from which about 300,000 gallons of oil, expressed at a low temperature, were obtained. The value of the oil is estimated at about \$100,000. The oil works have been enlarged since 1885, and about half a million gallons of oil are now produced annually.

Here is also an establishment for packing and salting the cod, which is found along all the southern coasts of Alaska, chiefly off the Aleutian islands, but also at Killisnoo and other points. The Alaskan cod are equal in quality to those of the banks on the Atlantic, and the supply is apparently inexhaustible. In 1886 about forty large and small boats were employed in the cod-fishery, and the annual catch was estimated at 1,500,000 fish. The cod are split and are dried artificially, the air being too moist to dry them by mere exposure.

The notable character of Killisnoo is Jake, once a chief of the Kootznahos, a very troublesome and warlike tribe, which formerly occupied a fortified village of the same name as the tribe. This village, in October, 1882, was shelled by Captain Merriman of the U. S. Navy, who was much blamed for his action in some quarters. The effect, however, has been altogether salutary, and the affair is viewed very differently by residents in Alaska and by the self-appointed critics in other places. The Kootznahos were the first natives in this region to learn the evil art of distilling a vile spirit called *hoochinoo* from sugar or molasses, using a kerosene can and a gun-barrel as a still. When a sufficient quantity of this product of misguided ingenuity has been illicitly distilled, a great "drunk" ensues, and trouble is nearly sure to result. The Kootznahos have now left their old village and have settled round Killisnoo.

The water close in shore at Killisnoo is deep enough to permit a large steamer to come alongside the wharf, and we soon saw "Jake" superintending the work of tying our boat up. He limped about in a somewhat

ungainly fashion, having once been shot in the leg, but his voice was guttural and authoritative. He wore a blue cloak lined with scarlet, and on his breast glistened a policeman's star, for Jake is Chief of Police at Killisnoo. Not long afterwards we saw him again, wearing an army lieutenant's tunic; this he soon exchanged for the walking dress of a 19th century gentleman, a Newmarket coat and a silk hat. At one end of Jake's house is a door, and over the door is a window, on each side of which are carved the wings of a bird, the head of which appears above the window, and the outspread tail beneath, the colors employed being black, green and white. This bird is, doubtless, Jake's totem, or family badge. In the house Jake keeps his uniforms and various costumes, some Russian testaments and service books, and a collection of portraits of actors and actresses. The characters of the Russian very much resemble those of the Greek language, and, on going into Jake's house, I was somewhat amused at seeing a Canadian clergyman (whom earlier in the voyage we had, for some unexplained reason, taken to be a Bishop)



JAKE'S SHIELD.

and a Toronto Queen's Counsel, both entirely ignorant of Russian, and almost so of Greek, trying to decipher the words of a Greek Church service-book. Jake possesses a considerable collection of letters given to him by various important persons who have visited Killisnoo. Indians are very fond of these letters of recommendation, and it is said that one of them for some time exhibited, with much satisfaction, a letter which denounced him as the biggest liar in Alaska, and warned every one to beware of him. Among his treasures Jake has his commission as a justice of the peace, signed by ex-Governor Swineford.

At the other end of Jake's house is a shield, under which is the following inscription :

By the Governor's commission  
And the Company's permission,  
I am made the Grand Tyhee  
Of this entire Ilahee.

Prominent in song and story,  
I've attained the top of glory.  
As Saginaw I'm known to fame,  
Jake is but my common name.

In front of the house is a flagstaff from the top of which floats the Stars and Stripes. Jake is frequently called "Saginaw Jake," from the fact of his having once made a trip on the U. S. Man-of-war *Saginaw*, which carried him off as a hostage for the good behavior of his tribe. He was

kept for a long time at the Mare Island Navy Yard, and returned thoroughly imbued with a feeling of friendship to the white man. He seems to possess many of the characteristics of a chief, for though he is ungainly and clumsy in his movements, yet he has a very decided habit of command, and his manners, when he converses with those whom he considers his equals, are quite agreeable. He dined on board our ship with two of his wives on the invitation of the chief steward, and I noticed how pleased one of these ladies seemed to be with the clean napkin provided for her use. Our pilot, Captain George, at my request, asked Jake for permission to take his portrait. Jake consented readily, and we marched off from the ship followed by a motley crowd of young ladies, stewards, Indians, and others. Jake, after availing himself of the services of a young parson from Portland as valet in a way that was very cool and amusing, appeared in front of the camera in four different positions. In one of his poses he held a sword in his right hand, but the evening was so far advanced, and the light so poor, that none of the portraits turned out satisfactorily. When the photographic work was over, he held up four fingers and one finger successively, meaning that he wished me to send him one print of each of the four photographs that I had taken. Then he asked, "How many moons till I get them?"

Not far from Jake's house is that of another and rival chieftain, over whose door is a colored device and inscription, the work of a local artist named Jim Blaine. The inscription runs as follows:

Rightful chief of all "Neltusken,"  
 "Gunch-tah-koogh" and "Koochaheen,"  
 Known as such I am Kah-Chuckte,  
 From Yakutat to far Stickeen.

Yes, my name it is Kah-Chuckte,  
 Manslayer in the Boston tongue,  
 Old as yonder Granite mountains,  
 Is the lineage whence I sprung.

Stores of furs and blankets pillaged  
 By the "Adams" pirate crew,  
 Though Kah-Chuckte, ever neutral,  
 Dwelt afar from Kootznahoo.

Now I ask not for positions,  
 Such to Jake I will concede,  
 While Kah-Chuckte from your nation,  
 Will for justice only plead.

"The Boston tongue" is English; the "Adams" is the U. S. ship *Adams*, which at one time cruised in these waters; the last verse is a satire upon the numerous offices held by the rival chieftain.

While we wandered about Killisnoo, our ship was discharging lumber to be used in building a Greek church, the Russian priest who is to be put in charge of it being one of our passengers. A large number of

barrels to be filled with the herring-oil manufactured here were rolled out upon the wharf. We looked into the oil factory, and saw large iron vats full of rank oil; also trays of codfish being dried, and barrels of salted salmon. The smell was so strong that we did not care to carry our investigations into the manufacture of fish-oil very far. There was some talk of getting up a native dance at Killisnoo, and to this we were to be summoned by the blowing of a horn, but nothing came of it. It was rumored that the Customs' Inspector on board our ship had discovered a large quantity of whiskey intended for illicit trading, but of this matter we had no certain information, though as to the general fact that a good deal of spirits are smuggled into the territory there can be no doubt. From Killisnoo we went on through Peril Straits—so called from the dangerous character of navigation—to Sitka, whence we returned to Killisnoo. Again the subject of a native Indian dance came up, and again the arrangements failed to reach a satisfactory conclusion.

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### The Fixing of Negatives.

BY J. C. HEGARTY.

THE tendency of many amateurs' best efforts in the line of negatives to become yellow and others to fade away a few weeks, or perhaps a few months, after development, leads me to sound a note of warning on this important subject, as well as to point out a remedy whereby this troublesome coloring of the gelatine film may be avoided.

I have frequently noticed this yellowing and fading of amateurs' negatives, and it was strongly impressed on my mind a short time since, while looking over some negatives, by a friend who is an enthusiastic amateur. He had shown me some of his prints, which were beautiful and excellent technically. He had exercised great care in the composition, exposure and development, as well as the after process of printing. I then expressed a desire to see some of his negatives, and found quite a number of the most valuable with a yellow stain covering a portion of the film, while others were slowly but surely fading away. There are many negatives made by amateurs which should fade away, and fade quickly, too, but they do not; on the contrary, they go far toward proving the plate-maker's assertion, that "a dry plate negative will last forever."

Valuable negatives which cannot be replaced, or which have been obtained at the cost of much labor and trouble, are more often the ones which become yellow or fade. It is certainly annoying on looking over a lot of negatives to find some of the most highly prized ones with a portion of the film a yellow or gray color. The cause of this lies in the fact that the negative was not properly fixed. The amateur should

understand the difference between real and apparent fixing, and a few words about the chemistry of this process may be appropriate.

The action of the hyposulphite of soda is to dissolve the unaltered bromide of silver in the film. As the yellow color of the silver disappears from the film a double salt is formed called silver sodium hyposulphite. The excess of hyposulphite of soda in the fixing bath finally dissolves this double compound, leaving a substance which is much more soluble in water than the silver sodium hyposulphite. It is then apparent that the plate is not fixed when the yellow color disappears, this change only indicating the formation of the double compound. If a portion of the negative is not properly fixed and any of the chemicals remain in the film, it will turn yellow on exposure to sunlight, and so eminent an authority as Dr. J. H. Janeway says that there is no process by which this yellow color can be removed.

The tendency of this yellow stain is to retard the printing of that portion of the view, and thus make an uneven print, while the presence of the hyposulphite compound will eventually ruin the negative. It is very easy to avoid these annoyances by fixing in two different hypo baths, both of the same strength. When the bromide of silver is dissolved, that is, when the yellow color disappears from the plate, it should be placed in the second hypo bath, where it should remain for at least ten minutes. All of the soluble silver is readily removed by this second bath, and the plate should then be placed under running water or soaked in a tray, changing the water frequently, until all of the absorbed hyposulphite is removed; this should be completed in about an hour.

It may be claimed that this result could be obtained by leaving the plate in the first hypo bath for a longer time, but this is not true; the first bath soon becomes charged with silver and does not act perfectly, while better results and clearer negatives are obtained by using the second bath.

Fixing the plates in two hypo solutions does not require much more time than the ordinary method of fixing in one bath, and this increase of time is more than compensated for by the less time required in washing the negatives. The first bath should be discarded as soon as it becomes much discolored and the second bath used in its place; by this means there is but little increase in the cost of fixing, the cheapness of the hypo making it a matter of no consequence. When all the other operations are executed with great care the fixing is often done in a careless manner, notwithstanding that perfect fixing is necessary for the preservation of the negative, and when so much care is taken in exposure and development we should secure also the keeping qualities of the negative by careful fixing, which requires but a small increase of trouble, and this is largely rewarded by more certain results.

## What Is a Dry Plate?

BY MAX HOLZBERG.

“WHAT is a dry plate? Well! what an absurd question to ask in a photographic magazine,” I hear some of the readers of the title of this article say. A young amateur friend of mine made a very similar remark quite recently. “Well, what is it?” I asked. “A dry plate?” said he. “Why, a dry plate is one of those glass things you buy in packages and put in the camera; any fool knows that.”

And it is astonishing, readers, the number of photographers, both amateur and professional—the latter being, if anything, more ignorant than the former—who have no more idea of the nature of the material they are using, in quantities, than this. Perhaps they have read something about their composition in some text book or magazine, and have been just as wise in the end as at the beginning.

Of course, reader, these remarks do not apply to you. I am fully aware that you know all there is to know about the matter, and that it would be an insult on my part to imply anything otherwise. So please do not read this article; it is intended for others. In it I have merely attempted to give some idea of the nature of a dry plate, written in language as simple as possible, in order that a child can understand.

Let us, then, take a dry plate and examine it in the light. What do we find? A sheet of glass coated over on one side with a grayish white substance.\* Let us lay our hand on this and hold it in the sun or in a strong light, and what is the result? In a few seconds we have an impression of our hand on the gray coating, caused by the light turning those parts, upon which it could strike, still grayer. If we expose it on the printing frame behind a negative, like a piece of silver paper, we should get a picture on it, but it would only be a very faint one, however long we left it in the light. Now, what is this grayish-white substance that is spread over the glass plate? It is a gelatine emulsion of silver bromide. You know what gelatine is; it is refined glue, and its principal use here is to hold the silver bromide and allow it to be spread over the glass. We therefore come to the more important ingredient—silver bromide—and this may be made by adding nitrate of silver to ammonium bromide. Let us try this. We will obtain some of both substances. We dissolve the silver nitrate in one bottle and the ammonium bromide in the other. We get two nearly clear solutions. Now, then, we will get

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\*For the sake of convenience I have supposed it to be a pure bromide plate. Nearly all the present makes of dry plates contain a small quantity of iodide, which gives a yellowish tinge to the film.

a glass of clear water and pour some of the ammonium bromide solution into it, and, stirring it round, we notice nothing. We still have a clear solution. Next we will add two or three drops of the nitrate of silver solution. What is the result? A curious one. We no longer have a clear solution. Directly the silver solution entered the water containing the ammonium nitrate it formed little white flakes—silver bromide—which fall to the bottom. Why is this? Let us ask the chemist. Here is his answer :



A formidable-looking reply, certainly, and one that is probably of little use to you. But let us translate it, and we have :

Silver nitrate added to ammonium bromide forms silver bromide and ammonium nitrate.

Let us try to illustrate this in a still simpler way. Let us imagine these four substances to be four persons—Mr. Silver, Miss Nitrate, Mr. Ammonium and Miss Bromide. Now, owing to circumstances over which they have no control, Mr. Silver and Miss Nitrate have to go through life together ; they do not care much for each other, and would gladly separate if they got the chance. The same misfortune attends Mr. Ammonium and Miss Bromide ; and, to let you into a further secret regarding these unfortunate persons, Mr. Silver is fondly in love with Miss Bromide and Mr. Ammonium adores Miss Nitrate. And so they go through life together until, happy day, all four meet. Now, can you not imagine the consequences? Mr. Silver quickly unites with Miss Bromide and Mr. Ammonium with Miss Nitrate ; or, viewing them once again in the light of chemicals, we say silver nitrate added to ammonium bromide forms silver bromide and ammonium nitrate, the silver having a stronger affinity for the bromide than for the nitrate and the ammonium having a stronger affinity for the nitrate than for the bromide.

Now, when we poured the silver nitrate into ammonium bromide solution the above change occurred. The white flakes were silver bromide, and they appeared in this form because this substance is insoluble in water. The ammonium nitrate, which was also formed, was dissolved by the water. Now, if we strain off these flakes we have the silver bromide we wanted, but in this state it would be of very little use to us ; first, because we could not very easily spread it on to glass, and second, because it was sensitive to the action of light, and we have made the experiment in the daylight, and so rendered it useless for our purpose. Now, gelatine is the substance found most useful to enable us to spread it on to glass, so we will take some of this, soak it in water and

dissolve it by applying a gentle heat. When we have a warm solution we will pour into it some of the ammonium bromide solution and stir it up. Now, as we have already explained, when we add the silver nitrate we form silver bromide, which is sensitive to light. Accordingly we must do this in the dark room, lighted only by a deep ruby light. We pour in the silver nitrate solution and stir up the gelatine. We no longer get little white flakes which fall to the bottom, because the gelatine solution, being of a viscous nature, holds it in suspension in fine particles, and the *emulsion* which is thus formed is of a creamy white. What have we now? A gelatine solution containing silver bromide and ammonium nitrate. To allow of this, however, we must add the two substances in certain proportions. On consulting a work on chemistry, we find that 98 parts of ammonium bromide will combine with 169 parts of silver nitrate, so that whatever amount of these substances we use we employ them in this proportion.\*

Now, the silver bromide held in suspension in the gelatinous fluid is what we want for our dry plates. The ammonium nitrate is not only useless, but harmful, as it would cause fogged negatives, so when the gelatine has set into a stiff jelly we squeeze it through a coarse netting, and thus break it up into fine shreds. These we wash in several changes of water, and the ammonium nitrate, being soluble in water, is washed away, leaving only the silver bromide.†

We now have a sensitive gelatine bromide dry-plate emulsion, but if used in this state it would be very slow in its working; that is to say, it would require rather a long exposure, and would not do for snap shots or instantaneous work. Chemists discovered that if the emulsion were kept hot for some time the fine particles of silver bromide became coarser and more sensitive to light. The process is called *digesting*. Having formed our emulsion, we have now only to spread it upon glass plates, which can easily be done when the gelatine is warm, and when the coating sets and dries hard we have the finished dry plate ready to put into the plate-holder and into the camera. When we uncap the lens and throw on to this coating or film of gelatine bromide emulsion the picture which appeared to us on the ground glass, a latent image is produced, which can be made visible by development. What the nature of this latent image is and why it can be made visible we must leave to another article. In this we have merely tried to give the young beginner some idea of a dry plate and the processes undergone in its manufacture.

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\*Several other substances are added to an emulsion, details of which it is not necessary to enter into here. Their functions are to increase the speed or to prevent frilling or fog.

†In practice it is so necessary to have all the silver nitrate converted that a little larger quantity of ammonium bromide is added.



## Snap Shots.

BY M. Y. BEACH.

THE hand camera has come to be almost as desirable an adjunct in the making of a newspaper as is the pen or pencil. Almost daily the writer finds use for the camera in collecting illustrations for newspaper articles. The subjects for the reporter's camera are as varied as are men, animals, birds, and the hurly-burly of life which mixes them up under all sorts of conditions. Within ten days the writer has photographed a Congressman, an 1800-lb. grizzly bear, a half-breed squaw, who, by the way, was a beauty physically, with the dignity of carriage of a princess of the royal blood, and because the writer neglected to fee the bucks before taking the snap shot, he narrowly escaped having his camera smashed by these indignant unpaid red men. The squaw pretended she didn't like it, at heart she did like it, and her likeness will grace thousands of homes in consequence. Cats, dogs, ships, mountain lions, seals, gulls, flying-fish, sharks, 400-lb. black bass, Chinamen, cowboys, surgical abnormalities, pretty girls, ugly old men, and marching soldiers have been other reportorial camera subjects down this way of late. One of the most interesting pictures obtained was the flash of a heliograph. This photographing of reflected sunshine at short range was so successful as to not only show the flash both at a range of ten feet and also of one mile, that the details of the apparatus appear through the dazzling flash, as well as the portraits of the soldiers operating the heliograph.

An instance of the celerity with which reportorial camera work is done occurred in Columbus, Ohio, in 1888. Major Warner was the newly elected Commander-in-Chief of the G. A. R. The afternoon paper needed a cut of Major Warner's portrait. The editor had two hours' time in which to get the cut before going to press. The writer, then on duty for the *New York Tribune*, volunteered to get the picture. Major Warner was found at his hotel, induced to sit beside a parlor window and have his picture taken. The camera snapped. In ninety minutes from that moment the photographic negative had been developed, a print made from it, and an outline pen and ink picture made from this photograph. A second photograph was made of the artist's pen work the size desired for the cut wanted for the press. The film of this second negative was transferred to a zinc plate, and the portrait of Major Warner etched thereon. This plate was "backed" by a block of wood, and was ready for the press to start. Meanwhile the reporter had interviewed Major Warner, getting his history from the cradle to the moment of his conversation, while assistants were working on the photograph. Nearly a column of type about the Major was ready for the press when the cut

arrived, and in a short time the Major's smiling face beamed from the page of the newspaper upon tens of thousands of eager readers. It was quick work. The camera did nobly. The paper had gone to press "on time."

## Photography and Law.

### THE RIGHT OF PRIVACY. No. 4.

BY WM. GEO. OPPENHEIM, PH. D., L. B.

**I**S IT or is it not a vicious doctrine to deny all right of privacy even to concededly public persons?

Should the rights of the public be recognized only in public side or public relations of a public man—not in his whole personality?

Presiding Judge Van Brunt (General Term, first department, New York) held (64 Hun. 594) as follows:

It is undoubtedly true that by occupying a public position or by making an appeal to the public, a person surrenders such part of his personality or privacy as pertains to and affects the position he fills, or seeks to occupy; *but no further*.

Is it not true, then, that the law of privacy *ought* to permit a statesman, or inventor, or artist, or philanthropist, no matter how famous he becomes, to enjoin the publication of his picture or the erection of a statue, if such form of publicity is distasteful to him or her?

In the case of *Marion Manola vs. Stevens*, the New York Supreme Court, at special term, granted an injunction under the following circumstances, which appears to be a precedent for restraining—at the suit of a *living* person—the circulation of her pictures, even though she be a public character.

The plaintiff Manola alleged that while playing in a New York Broadway theater, in a role which required her appearance in tights, she was, by means of a flash-light, photographed surreptitiously and without her consent from one of the boxes of the theater.

The Court issued an injunction to restrain any use being made of the pictures so taken.

An actress would *seem* to be a public character, and, moreover, the picture in question was taken of her while actually officiating in her public capacity.

This would seem to argue that even a *living* public character has a right to enjoin the publication of a distasteful picture.

The question is, however, more difficult of solution with regard to *deceased persons*, and the general nature and limitations of such rights are not rendered clear by the various opinions delivered in the celebrated

case of Schuyler vs. Curtis, now on appeal to the New York Court of Appeals.

In the latter case, the action was brought by relatives of the deceased, Mrs. Schuyler, to restrain the erection of a proposed statue to her in the World's Fair at Chicago, as "The Typical Philanthropist."

The views expressed in the Manola and Schuyler cases seem to be at variance with the Corliss case in the Federal Circuit Court, in which the decision containing the following language was rendered by Mr. Justice Colt :

But while the right of a private individual to prohibit the reproduction of his picture or photograph should be recognized and enforced, this right may be rendered or dedicated to the public by the *act* of the *individual*, just the same as a private manuscript book or painting becomes (when not protected by copyright) public property by aid of publication.

The distinction in the case of a picture or photograph lies, it seems to me, between public and private characters.

A private individual should be protected against the publication of any portraiture of himself ; but where an individual becomes a public character the case is different.

A statesman, author or artist, or inventor, who asks for and desires public recognition, may be said to have surrendered this right to the public. When any one obtains a picture or photograph of such a person, and there is no breach of contract or violation of confidence in the method by which it was obtained, *he has the right to reproduce it*, whether in a newspaper, magazine or book. It would be extending this right of protection too far to say that the general public can be prohibited from knowing the personal appearance of great public characters. Such characters may be said, of their volition, to have dedicated to the public the right of any fair portraiture of themselves.

This action, it will be noted, was brought by Mr. Corliss' widow and children.

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## The Micrograph.

From the *Scientific American* to whom we are indebted for the accompanying illustrations of a complete little picture device gotten up by Mr. F. W. Gardam, of this city, we take the following description :

The micrograph is an interesting little instrument for showing a succession of photographic pictures, such as portraits, landscapes, statuary, paintings, and all kinds of notable objects. It consists of a case which carries a microscopic lens and also a transparent wheel or disk, on which the pictures are photographed ; and the pictures are viewed by simply revolving the disk with the finger so as to bring the

pictures successively under the lens, by which they are magnified or enlarged. The mode of using the instrument is shown in Fig 1.

FIG. 1.

The full-sized instrument is given in Fig. 2, from the side of which one edge of the picture disk is seen to project. Fig. 3 shows the picture disk itself. The case can be readily opened and new photo. disks put in, bringing thus other series of pictures. In this way the photographic representations of hundreds of remarkable scenes and objects may be preserved in a very small space, yet always ready for interesting study

FIG. 2.

FIG. 3.

and examination. The micrograph is destined to become a very popular instrument.

## Beginners' Column.

### CHAPTER XVII.—ENLARGING.

BY JOHN CLARKE.

**I**NSTRUCTION in photography would be incomplete unless at least the general principles of enlarging were included, so, although from most points of view direct pictures are better than enlargements, and small or medium-sized pictures are for most purposes satisfactory, there are some, including decorative purposes, for which larger sizes are desirable than it is possible or at least convenient for the average amateur to make direct.

Enlarging is generally and most conveniently carried on by artificial light, and the principle involved is simply that of the optical lanterns; indeed, for enlarging from small negatives, not larger than three inches square, or where not more than that is to be included, the ordinary optical lantern, if the objective is good, answers the purpose admirably; while for negatives of any size the only difference is that the diameter of the condenser must be at least equal to the diagonal of the negative, or of such portion as is to be included in the enlargement. That being so, a description of how the beginner may, by means of the ordinary lantern, make enlargements from his small negatives will cover enlargements from negatives of any size.

The source of illumination is of some importance, the lime light being very much better than the oil lamp, especially the multiple wick variety, not particularly from its greater intensity, as that is simply a matter of longer or shorter exposure, but because of its more nearly approaching the theoretically desirable light, a point. In other words crispness of definition is dependent, not on the intensity of the light, but on its size; the more closely it approaches a simple point the better the definition; and that applies equally to enlarging and screen projection, although it is of less importance for the latter than the former. An easel must be substituted for the ordinary screen, any simple arrangement by which a board on which to place the sensitive paper may be kept upright and square on to the lantern. Probably the simplest way, where it is available, is to have a long table with the lantern at one end and the easel at the other, the latter sliding between guide rods so as to keep it at a right angle to the axis of the lens while moved to and fro so as to secure the desired degree of enlargement. Of course the room must be perfectly dark, or lighted only by a safe light, an orange in this case being more convenient than the usual ruby, and care must be taken to prevent the emission of any white light from the lantern, for which purpose the focussing cloth comes handy.

Things thus arranged, and the easel board covered with white paper to facilitate focussing, the light should be brought to its best, the negative placed in the carrier, and the lens capped so as to make sure that no stray ray shall reach the paper or even find its way into the room. Everything being light-tight, the cap should be removed, the easel slid to and fro till the image is of the desired size, and then sharply focussed. That accomplished, the lens is again capped, and a piece of bromide paper fastened on the easel board exactly over the place occupied by the focussed image, either by drawing pins, or better still, pressed close to it by a light frame like the *kits* used in plateholders, either permanently hinged to the board or kept in position by *buttons*. For enlargements of say 12x10 or upwards something like the latter arrangement is a necessity, as the paper would *sag* between the pins to such an extent as would interfere with sharpness.

The next step is the exposure, and how long that should be it is impossible to say, as it depends on at least three factors of unknown quantity—the intensity of the light, the density of the negative, and the degree of enlargement. But what cannot, *a priori*, be stated, may by one or two experiments be easily ascertained; all that is necessary being to make various exposures on several small pieces of the paper and develop them. The development of enlargements is exactly the same as the development of contact prints fully described in the last chapter, and accidental over-development may be remedied in the same way, by bleaching and re-developing.

But those who may not possess a lantern, or who wish to enlarge from larger negatives and do not care to invest in a large condenser, may at little cost and with such apparatus as they have or can construct, turn out quite as good work without either.

The illuminant in this case is daylight, and the operation may be performed in the ordinary dark room, provided it is large enough and has a window, or a suitable opening can be made through one of the walls. If a window be employed, it must be completely darkened, all but an opening the size of or a little smaller than the back of the camera to be employed, and so fitted that when the camera is placed against and close up to it white light is excluded. Outside the window, and with its lower edge on a level with the lower side of the opening, there is placed at an angle of 45 degrees a reflector, a frame covered with white cloth or board covered with white paper, by means of which the light from the sky, falling vertically, is reflected at the incident angle and so horizontally through the negative and lens on to the easel. The long table or a bench of rough boards is convenient in this case also, its one end with the camera close up to the window and the easel on the other end. If

the plateholders are of the kind in which the slides come altogether out and without a fixed division, the negative may be placed in one of them and put into the camera in the ordinary way, with the slides withdrawn, of course. But, if not, a simple frame that will carry the negative and go into the place of the slide may easily be made. The ground glass, of course, in any case must be removed. The ordinary lens with which the negative was taken will generally answer admirably for enlarging, especially if nothing less than four times the size be required; an 8-inch lens, for example, requiring only a camera extension of 10 inches, and for eight times, one of only 9 inches; while for the former the easel will be 40 inches and for the latter 72 inches from the optical center of the lens, generally about the diaphragm slot. In most of the *Annals* will be found a table of distances for enlargements and reductions, the application of which will facilitate the getting of the desired size, it only being necessary to ascertain from one of them the distance between lens and easel for the particular number of times the negative is to be enlarged, place it at that distance and focus. The factors controlling the exposure are by this method as numerous and varied as by artificial light, and should be ascertained by experiment in the same way.

Cases occur where one comes across, say, a lantern slide or negative of similar size which he is at liberty to copy, and of which he may, for some special purpose, desire a number of copies of, say, 12x10. Instead of making each enlargement separately by either of the above methods it would be better to make from the negative a positive by contact or superposition, and place the positive instead of the negative in the camera. The resulting enlargement would be a negative, and should, of course, be made on an ordinary gelatino-bromide plate instead of bromide paper, and developed as ordinary plates are. From this negative the desired number of copies could be printed in the ordinary way, with less trouble and at less cost than by separate enlargement.

It only remains to add that those who like vignettted enlargements may produce them in the simplest manner. In a sheet of cardboard eight or ten inches square cut an opening of the desired shape and size. The latter can easily be ascertained by experiment. Before removing the cap, hold the card pretty close in front of the lens, and, being guided by watching the image, move it to the proper distance and give it a gentle circular motion during the whole time of the exposure.



# THE AMERICAN AMATEUR PHOTOGRAPHER.

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ALFRED STIEGLITZ.

EDITORS

F. C. BEACH.

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## Editorial Comment.

*Our Frontispiece.*—"The Future Master," by Countess Loredana da Porto Bonin, is the first example of this artist's work published in America. The Countess' work first came into prominence at the Jubilee Exhibition in Berlin, 1889, when her large genre pictures, most of them taken by flashlight, were considered the attraction of the whole exhibition. The Countess proved herself a thorough artist, the majority of her pictures breathing of life and naturalness. Later on the Countess exhibited in England, Austria, Italy, her native country, and won great honors wherever her work was shown. Here in America her work is unknown. Loredana is certainly the foremost of the living lady photographers. The picture we reproduce is one of her happy efforts. It was taken by flashlight.

*New Contributors.*—We are pleased to announce that Mr. George Davison, of London, so well known throughout the photographic world as one of the foremost amateur photographers, will contribute regularly each month notes of interest and act as our London correspondent during this year. Another regular contributor under the name of Max Holzberg, but who is thoroughly posted on the science and technique of photography, will furnish original articles of interest in this line. We can thus assure for our readers matter up to date, readable and instructive. In addition, there will be the Beginners' Column, by John Clarke,



another interesting writer on photography, whose articles in the past have been greatly appreciated. Articles by amateurs, illustrated or otherwise, will be welcomed. It is the desire of the editors to secure the interest of all in the welfare and progress of the magazine, in order that the high standard fixed upon may be maintained.

*Universal Cloud Photography.*—The meteorological department of the Weather Bureau of Washington are arranging a universal system of cloud photography, to be practiced all over the United States for the next three years, and to interest other countries also, something on the plan of universal astronomical photography. A special screen is used in front of the lens for sifting out the blue rays, an exposure of twenty seconds being given, which brings out the contour and form of a white or brown cloud against the blue sky in strong relief and enables its character to be readily studied and understood. Attention is to be given to the formation of clouds preceding thunder-storms, more especially those having a slow motion. There is reason to hope that accurate photographs taken systematically of clouds will reveal characteristics that will enable their varied appearance to demonstrate to a certainty conditions which are now somewhat problematical. It will be of considerable value to the Weather Bureau in establishing a record as a guide on which to base probable prognostications, and at the same time correct any hazy notions of the appearance of clouds that may exist. Cloud photography is a subject that many amateurs delight in, and we doubt not but what they could be used to advantage as auxiliaries for the Weather Bureau.

*The Service of Cheap Hand Cameras.*—In the past ten years the development of the hand camera has proceeded to a remarkable extent, until now it is made, even of the magazine type, of such degree of cheapness that a camera can be had to meet the size of most any pocketbook. Why this furore of cheap cameras? We answer, to meet the popular demand and to encourage those who have a yearning for picture-taking to do so with the least expense. Again, the plate-maker, the lens-maker, the dealer and the manufacturer all desire an increase of trade, which is assisted materially by the introduction and use of cheap cameras. But still another good reason is that it is the great middle class, persons of moderate means, who crave the pleasure of taking pictures on their vacation tour, or of friends for their amusement, who know nothing about the art or science, who cannot afford to spend much to satisfy their desire; they buy the camera with the expectation that, if successful, and the hobby does not die out, they will want a better instrument. Hence the cheap camera may be regarded as a trial instrument, likely in numerous cases to interest so many in the art that they will eventually become large consumers of plates and other accessories. Thus it per-

forms the service of popularizing and educating people into the practice and value of photography. Evidently the cheap camera, like other things that are cheap, has come to stay, for the reasons we have given. The more people get interested in making photographs, and are educated in regard to the difficulties involved, the better will they appreciate the work of professional photographers, and assist the latter by throwing work into their hands.

*The Second Champion Artistic Competition.*—On another page will be found the terms and conditions of the second champion artistic competition, to which attention is called. It will be observed that the fee is reduced one-half, and a less number of photographs are required to be submitted. The success of last year's competition was so satisfactory that it is expected and hoped this year a much larger number will participate. The pictures of last year (many of them having been reproduced in the February *AMERICAN AMATEUR PHOTOGRAPHER*) are now ready to be sent to the clubs and societies desiring to exhibit them. The Springfield (Mass.) Camera Club is the first to make a requisition; the set will be exhibited there at the opening of the new Young Men's Christian Association Building during the first half of March.

*Our Prize Lantern Slides.*—A set of seventy *AMERICAN AMATEUR PHOTOGRAPHER* prize lantern slides have been arranged for exhibition, and are now available for use by subscribers and clubs. Application should be made to the editors early in order that a schedule of dates may be made out. They were first exhibited before the Society of Amateur Photographers in this city on February 22.

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#### Exhibition of Studies in Black and White at Bridgeport, Conn.

The Public Art Gallery in connection with the Bridgeport Library was opened on January 19th with an exhibition of sketches and studies in black and white gotten up by Superintendent Hills and his assistants. There are examples of work by artists connected with the several noteworthy publishing houses, such as the *Century*, *Scribner's*, *Outing* and *Life*, considerable work by Sarony, and carbon photographs on rice paper by James L. Breese are to be seen, besides very creditable work by local talent. The pen and ink sketches, brush drawings, etc., for line work and half tone work are now so necessary for purposes of illustration that many new artists devote their whole attention to it, and produce some remarkably clever things.

The exhibition has been largely attended, and is quite popular. It closed the latter part of February. It is interesting as showing the rapid progress made in the past few years of black and white work, especially adapted for reproduction by photographic processes.

## Society News.

SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.—*Saturday, February 9th*, occurred a smoking concert at which the usual features of other concerts were given, such as lantern slides, music, singing and variety acting. It is reported to have been a success.

*Regular Monthly Meeting, Tuesday evening, February 12th.*—The meeting was called to order at 8.30 by President R. A. B. Dayton, the attendance being unusually small. After the minutes of the previous meeting were read and approved, the President at 8.30 introduced Mr. W. N. Jennings, a member of the Photographic Society of Philadelphia, who entertained the meeting for half an hour by a series of lantern slides, illustrating first "Balloon Views of Philadelphia and Vicinity," and second "Street Scenes Caught with a Kodak." His views were novel and interesting, particularly bird's-eye views of the city of Philadelphia. He ascended with Prof. King at 7 o'clock in the afternoon in a balloon, the bag of which was filled with pure hydrogen gas, one day in the summer of 1893. The sensation in the balloon was that it was standing still and the scenery below was moving along like the unfolding of a huge map. This induced a sense of confidence and at no time did he experience any feeling of fear. The ascent and descent were well illustrated.

In street scenes he was very fortunate and had made many exposures. The time of day best suited for the work was from 11 A. M. to 1 P. M. He showed several amusing subjects taken around the market in Philadelphia, and of newsboys gambling on brown-stone staircases. At the conclusion of the lecture, President Dayton tendered him the thanks of the society. Mr. Murray remarked that in the selection of subjects, Mr. Jennings showed excellent judgment, and demonstrated the value of patience and thought in waiting for the right moment to come before operating the shutter. In answer to several questions about the quality of the film used, Mr. Jennings said he had had more or less trouble, especially with the Eastman, but if it was used reasonably fresh, soon after manufacture, he generally obtained good results and used the combined eikonogen and hydroquinone developer. As illustrating the uncertainty of the film, he said he took a quantity with him to Yellowstone Park, made a thousand exposures and only secured 44 fairly good negatives.

The Committee on Science and Art through Dr. John H. Janeway, the Chairman, reported that the subject under consideration was the study of "Artificial Light in Portraiture," and was to be taken up in its different phases. The historical portion was assigned to him and he read what he termed Part I. First he alluded to pyrotechnic lights, then the magnesium light describing its development, and closed with allusion to the petroleum light, stating that portraits had been made in two minutes under a light of this character, given out from six lamps of 45 candle power each.

### PART I—HISTORY OF ARTIFICIAL ILLUMINATION AND ITS APPLICATIONS.

#### ARTIFICIAL LIGHT FOR PHOTOGRAPHIC PURPOSES.

BY JOHN H. JANEWAY, M. D., U. S. A.

The scanty light of our short winter days, and the uncertain conditions of the sky and atmosphere in many more of the months which constitute our year, all tend

to embarrass photographers in many an annoying and much distracting way, entailing as it does at the same time, broken promises, ill temper, and pecuniary loss.

Hence the ever progressive mind of man early began the search for a substitute generated by artificial means, for daylight—one which would enable the photographer to work at any hour of the day, independent of darkness, cloud, or fog—combining economy with comfort to the sitter and regularity of results, by bringing the lighting and exposure under absolute control.

Therefore, to trace in as concise a way as practicable the different paths of research, the various substances and means employed, and by whom recommended if possible; and the varied successes resulting from these different investigations and processes pursued, by scores of earnest men, will be the purpose of this paper.

I am fully aware that this is not an easy task that has been designated by the committee, in pursuance with its scheme of investigation for the best possible artificial light for photographic portraiture. So much chaff and worthless matter has to be sifted from the pure grain, so many claims for priority have to be looked into and decided if possible, dates settled, and erroneous statements corrected, that the further one goes into the question its magnitude seems to increase by a double geometrical progression. But as I have undertaken the task, and it must be confessed at the same time, with considerable trepidation, I shall endeavor to complete the subject to the best of my ability, and crave your kind indulgence for any failure or omission that may occur.

I seems to me best in attempting the history of the various kinds of artificial light that have been used, and the substances employed in its production from time to time, in order to avoid confusion, to arrange each class by itself and continue the description of that class down to as near the present day as possible, or to the time of disuse, noting the various modifications and improvements before beginning another.

**THE OXYHYDROGEN LIGHT, DRUMMOND LIGHT.**—This light was originally used in signaling purposes by Lieutenant, afterwards Captain Drummond (hence the name of light), about 1830. It consists of passing a jet of oxygen through a flame of hydrogen, which is made to impinge on a disk or cylinder of lime, when the lime is rapidly brought to an incandescent state and a very bright light is produced. One of the earliest adaptations of the lime light was for the exhibition of microscopical objects by projection onto a disk or screen, and when used in the magic or optical lantern became a valuable means of illustrating lectures. The introduction of photography added greatly to the popularity of the lantern, and which has steadily increased up to the present time. The preparation of oxygen is but a simple matter, but at the same time care is required. The black oxide of manganese must be pure, the gas evolved should be washed, and all atmospheric air forced out of the India rubber bag, or steel cylinder, before the oxygen is admitted. Hydrogen being troublesome to make, it was discovered that common coal gas formed a good substitute and is now generally used in producing the lime light. The first notice of the use of this light for portraiture that I have been able to find, appears in the *Photographic Art Journal*, March, 1852. A notice of three daguerreotypes taken at night by aid of the Drummond light, by Mr. Whipple, of Boston, Mass.: "They are very good, much better than many daylight pictures. The outlines are very strong and dark, giving great boldness, but they are wanting in softness of tone and expression."

**THE OXYCALCIUM LIGHT.**—An excellent light is produced when oxygen is blown

through a flame of spirits of wine (alcohol) upon the lime disk or cylinder, and was proposed as a substitute for the oxyhydrogen light.

**THE ETHOXOLIME LIGHT.**—The vapor of ether, when mixed with oxygen, gives a very good light. When it was first proposed to substitute ether for hydrogen from coal gas, I do not know. It was demonstrated before this society about 1885 or '86. But on account of the dangers incurred by it in the hands of inexperienced persons it never became very popular, though various plans, saturators, etc., have been proposed by which danger is said to be minimized. It is very difficult to estimate the intensity of very bright light; the human eye alone can not do it, and therefore a comparison with a standard light becomes necessary; various lights have been suggested, lamp burning highly volatized liquids have been invented, but only to meet serious objections. The amyl acetate lamp was adopted in a congress at Paris some years ago. The light from a spermaceti candle burning two grains per minute—one of the earliest suggested—is generally adopted, hence the term candle power. With this light the light of the flame of an Argand burner can be adjusted, and against this the more intense lime light can be tested. Determinations made in this manner give from 250 to 800 candles as the value of the light from incandescent lime. The great differences here given arise from the kind of burner used, the size of the aperture through which the oxygen is passed and the degree of pressure. The kind and form of lime used will also affect the intensity and quality of light.

**BENGAL LIGHT AND OTHER FIREWORK COMPOUNDS.**—I have been unable to find the exact date when these compounds were first used in photography or for photographic purposes. But as a patent was granted John Moule, England, February 18th, 1857, on an apparatus for burning pyrotechnic compositions for illumination, and called Moule's Photogene, they must have been in use some years before. "G. M. says in the *British Journal*, 1887, that as far back as 1861, there flourished in the immediate neighborhood of Covent Garden, London, a studio, where it was announced that photographic portraits were taken every night by electrical light, twenty years before Van de Weyd." (G. M. must have referred to this process as having existed previous to 1857.) This was not true; they made pictures by the use of Moule's photogenic lamp, probably the first commercially used light for photography; all the firework burning lamps sprung from this one.

The powder used was composed as follows:

Pure and well dried Nitrate of Potash .....	3,000 parts.
Flour of Sulphur .....	1,000 "
Pd. Sulphuret of Antimony .....	200 "
" Red Orpiment .....	400 "

Well mixed and passed through a sieve.

**BENGAL LIGHT.**—A species of fireworks originally used for signaling at night or otherwise, producing a steady, vivid white or blue light, according to its ingredients.

The following formulæ of ingredients were amongst those most usually used:

- No. 1. Saltpetre.  
Sulphur.  
Black Sulphite of Antimony.
- No. 2. Nitre.  
Mealed powder.  
Sulphur.
- No. 3. Sulphur.  
Mealed powder.  
Antimony.  
Lampblack.

How long these fireworks were used generally is not stated in any of the journals, but that they had gone out of use is shown by the following: "Vogel's Progress in Photography," Am. Edition, 1883, noticing a lamp called the Luxograph, says: "In place of the costly magnesium wire, an attempt has been made to reintroduce Bengal white fire. It is burned in a blue glazed lantern with chimney, the whole standing in the focus of a concave reflector of about  $4\frac{1}{2}$  feet in diameter. The reflector is above the head of the operator and directed downwards towards the sitter. It consists of a large number of small bits of looking-glass set together like mosaic; the mouth or opening is covered with fine tissue paper to moderate the light, which would otherwise be too crude. Gelatine plates, extra rapid, are used. Focussing is effected by means of a row of gas jets arranged over the reflector. About eight seconds is the usual time for gelatine plates. The whole affair is simple and portable. Alden, the inventor, has had frequent orders to take the apparatus to halls, when large mask balls are given. As late as July or August, 1884, Dr. Struenberg, in an article on artificial light for photographers, recommends for that purpose the pyrotechnic mixtures:

No. 1.	Nitrate of Potash.....	112 parts.
	Flour of Sulphur.....	42 "
	Sulphuret of Antimony.....	12 "
No. 2.	Nitrate of Potash.....	8 lbs. 9¼ oza.
	Flour of Sulphur.....	3 " 3¼ "
	Sulphuret of Antimony.....	8 oza. 8 dra. 20 grains.
	Auropigmentum (As. S <sup>2</sup> ).....	6 " 40 "

No. 1 furnishes a perfectly white light, that of No. 2 has a bluish tinge and more actinic power; it may, however, be objected to, because of the large amount of arsenic it contains. Dr. S. says: "The manner of illuminating with either of these is practical with our present rapid way of working, and even adapted to portraiture when proper reflectors are used."

There are many objections, and serious ones, too, encountered in the use of these firework compounds. 1st. The difficulty and uncertainty in obtaining prompt and complete ignition—in many cases arising either from imperfect mixing, dampness or impurities in the components. 2d. The smoke and odors of the burning mass, not entirely dissipated even with the long chimneys and good draught that were employed for the purpose of carrying these off; and finally, the danger arising from inhalation of the deleterious fumes from some of the poisonous ingredients employed in the compound.

It was also recommended to combine powdered magnesium with firework compounds to increase the intensity of the light—Gaedicke, Miethe and others—but owing to the poisonous nature of many of the compounds and the serious accidents that occasionally occurred, both in their preparation and in their employment, soon called for their disuse.

**THE MAGNESIUM LIGHT.**—In 1808 Sir Humphrey Davy demonstrated by decomposing earths and alkalis their metal bases, amongst which, a little later, magnesium was discovered. It remained but still little more than a laboratory curiosity until 1859, when Bunsen, of Heidelberg, and Dr., afterwards Sir H. E. Roscoe, of Manchester, Eng., pointed out the value of magnesium as a source of light for photographic purposes. In 1862 M. Edward Sonstadt took out his first patent for improvement in the manufacture of the metal magnesium. In 1863 the manufacture of magnesium was commenced in Manchester, Eng., by a company formed for that purpose. As at this time no other use for the metal was known than that of a means

for producing a brilliant light, it became a question as to how to utilize it. The wire form was found the most convenient.

In one of the Manchester papers, about the end of 1863 or beginning of '64 the following appeared: "Interesting photo-chemical discoveries. At a recent meeting of the Manchester Literary and Philosophical Society, Prof. Roscoe exhibited the light emitted by burning a portion of a fine specimen of pure magnesium wire, 1 mm. in diameter and 10 feet long, which had been manufactured by M. Edward Sonstadt." Mr. A. Brothers demonstrated shortly after this occurrence the value of this new source of light for photographic purposes. He hammered into a thin sheet a small lump of the metal given him at the occasion related above, and with strips cut from this sheet, made a good copy of an engraving, in a darkened room, in 50 seconds. Early in 1864 a stereoscopic picture of Blue John Mine in Derbyshire was made. In May of the same year the portrait of Dr. Faraday was taken at the Royal Institution in London. In 1865, Prof. Piazzi Smyth obtained some good portraits of the chamber in the interior of the great Pyramid.

In 1866 and '67, Dr. Edward S. Wilson, editor of the *Philadelphia Photographer*, and *Mosaics*, described in both publications and also demonstrated the method of graphic Portraiture with magnesium.

In 1867 or '68 in this country and in 1869 in England, Mr. George K. Proctor, of Salem, Mass., obtained patents for photography at night with the aid of magnesium in a specially prepared room or apartment. It may be interesting to give a description of this invention and his claims as set forth in his applications for the patent. He says: "It consists in constructing a room for photographic purposes of such a form that the rays of magnesium light placed within will be reflected and concentrated upon the person or object to be photographed, so that photographing may be successfully performed at night by artificial light or other than that of the sun. The room or apartment is of oval form and elongated, so as to have an internal curved surface which will reflect the rays of light from a lamp or other luminary in proper place, upon the subject. It is made of oak bows bent into a proper shape and covered with paper cloth, which by large eyelets in the edges is hung on hooks inside the bows. It stands about 6 feet high, 5 feet wide, 6½ feet long and weighs about 35 pounds. An opening is made in the covered end of the room or apartment for the end of the camera (which is adjusted by the operator outside) to pass through, and the other end of the room or apartment is open to admit of the ordinary background for the picture to be placed in proper position relatively with the person or object to be photographed." The *Philadelphia Photographer*, February, 1869, reproduces a diagram showing the position of the whole apparatus needed in operating at night, in working position.

Mr. Proctor used a kerosene lamp for focussing, and feeds the magnesium for lighting the subject by means of a clockwork lamp. To this lamp an indicator was attached, which might be set at the discretion of the operator, to indicate when the time necessary for an exposure had expired. Mr. Proctor tersely set forth the following claims after describing in full his invention. Claims:

1. For photographic purposes an apartment or room, having its interior of such form as to reflect or concentrate the rays from a lamp or burner upon the person or object to be photographed, substantially as set forth.
2. The opening in the room or apartment, for the purpose of allowing the camera outside of the room or apartment to be properly adjusted with regard to the person or object to be photographed within the room or apartment.

3. The employment of magnesium for illuminating purposes, in connection with a room or apartment constructed in the manner or form substantially as herein set forth.

But little mention of the use of magnesium is to be found in the journals of the day during the next decade, the high price of the metal effectually preventing its general use by photographers. In 1883 or '84, the cost of production having been much reduced, the employment of magnesium as a source for artificial light began to be revived, and in 1885 new methods were sought for of burning it, so as to increase the intensity of the light. Late in 1885 the *British Journal* stated that a most brilliant actinic light could be obtained, softened and diffused, by burning magnesium in a long glass flask filled with oxygen gas.

January 26, 1886, Mr. Beach, then President of this society, read a paper and exhibited a new magnesium light of his own construction for burning magnesium ribbon in oxygen gas (exposure also being made) before the society.

He also described a second form of magnesium light, recommended by W. H. Hamron of London. Simply a brass egg, shaped funnel, leaving an aperture in the bottom of about  $\frac{1}{8}$  of an inch in diameter. Under the mouth of the funnel is an alcohol soldering lamp having a long, horizontal oblique nozzle which allows the flame to come under the mouth, but permits the wick to be a trifle to one side. A tray is placed on the floor to catch the sand. Equal parts of fine magnesium powder and white sand is dumped into the funnel and falls in a steady stream on the hour glass principle upon the alcohol flame. A Benjamin magnesium lamp, intended to unwind magnesium ribbon as fast as it burns, was also shown. At another meeting of the society later, Dr. J. J. Higgins' lamp was shown. The principle of its mechanism was forcing a quantity of powdered magnesium into and through a powerful alcohol lamp by atmospheric pressure. Swansom's oxy-magnesium lamp was introduced into England about this time.

The Year Book of 1888, reviewing the previous year, says, "Magnesium lighting has taken a prominent place even in the every day work of the photographer, and this appears due to two circumstances: The revival of the flash light by Piffard, and the reduction in the price of the metal. Not only has the flash light been used to record social events, but also applied to scientific investigation, Julius Sachs, of Philadelphia, having by its aid obtained admirable photographs showing the successive stages of the development of the bud and flower in the case of the night blooming cereus."

Dr. H. G. Piffard, then a member of this society, first used gunpowder, 3 parts, magnesium powder, 1 part; but not being satisfied with the results of his experiments he turned his attention to ordinary negative gun cotton, and at last settled upon the following proportions: Gun cotton, q. s., finely powdered magnesium twice the weight of the gun cotton used. He simply sprinkled the magnesium upon the gun cotton and touched it off with a match. He also produced the flash by means of a pistol and made negatives thereby.

The results obtained by this process suddenly became popular, and flash light photography with the aid of magnesium was the order of the day. Many portraits were made at this society, and by prominent photographers in this city and elsewhere.

When Cowles improved the mode of manufacture of aluminum in 1885 by electrolysis, thereby reducing the cost of the same, it was recommended that a certain pro-



portion of aluminum should be added to the magnesium powder to increase the intensity of the light and lengthen its action.

Magnesium as a means of illumination for submarine photography was proposed about 1880 or '90. In 1893, M. Bouton perfected a magnesium lamp for that purpose, which he and others employed with very good results. For a brilliant light required for a short time only, the use of magnesium in the form of a fine powder is invaluable.

Vogel states that he determined the relation of magnesium to the electric light by means of his Scalen photometer as follows: A Siemens light of 800 candle power without reflector produced the same effect in 2 minutes at a distance of 7 inches as 366 grains of magnesium wire at the same distance. The light from a Bunsen battery of 50 cells showed feeble action, being about  $\frac{1}{11}$  of Siemens' light.

**PHOTOGRAPHING BY PETROLEUM LIGHT.**—In a report by Drs. Mallmann and Charles Scolik, 1886, we learn that the first attempts in photographic portraiture by petroleum light were made by Victor Schumann in 1881, and recently he repeated his experiments with cyanine-ammonia bath plates and obtained with six lamps of forty-five candle power a good negative in two and one-half minutes. That many comparative experiments have shown erythrosim bath plates to be in petroleum light 20 to 25 times more sensitive than the mother emulsion, with a light force of from 2 to 3 hundred candles, petroleum or gas, it is possible to photograph in a shorter time than formerly in daylight, with wet collodion plates, and what is more important, the effects are orthochromatic. With a 2 B. Dallmeyer lens, second stop, the time of exposure varies from 3 to 10 seconds. Lighting an atelier for purpose of portraiture and rapid exposures requires from 250 to 300 candle power. The report goes on to describe the lamps, circular burners, the room well ventilated and to be painted white, the arrangement of the lamps, with oblique reflectors, white reflecting screens and a background painted in a light gray tone.

The lamps recommended are the so-called Phare lamps (lighthouse) made in three sizes.

No. 1	of 16 inch burners	of 63 candle power.
No. 2	" 22 " " "	83 " "
No. 3	" 28 " " "	126 " "

Mr. F. C. Beach introduced the representative from Mr. G. Gennert, who exhibited several Ross lenses, especially the Goerz Double Anastigmat, which were of very fine quality and workmanship. He also showed the Seraph casket or combination of lenses by which different classes of work can be easily produced. The meeting then adjourned.

*Thursday evening, February 14th.—Fifth Annual Auction Sale.*—Mr. T. J. Burton acted as auctioneer.

*Friday Evening, February 22d.—Exhibition of Lantern Slides.*—It is seldom that an exhibition of slides is held on a holiday, but the exhibition on this evening was specially attractive, and a large audience was present. Mr. William M. Murray presided at the screen and Mr. F. C. Elgar at the lantern. There were 175 slides exhibited, beginning first with those of the Chicago Society of Amateur Photographers. In these there was not much perceptible improvement over former years, though there was more variety in subjects. Among the contributors were H. D. Higinbotham and C. D. Arnold, of World's Fair fame. Their work was illustrative of architecture in California and England and France. The slides had the merit of being very clear, sharp and perfect. Mr. W. A. Morse sent good examples of the ending of the great Chicago railroad strike. His "Barefoot Boy" and "A Quiet

Game" were also very good. Mr. F. F. Gaylord had several groups and studies the best being a slide called "Our First Lesson," showing a group of youngsters on steps, one behind the other, just ready to take a dip or plunge. Their mother was looking at them around the corner of the house. He also had a picturesque slide, a night view of the Dream City. His attempts in getting up odd and attractive pictures are in the right direction, and in him the society has a valuable member. The best picture, by Mr. C. D. Irwin, was entitled "Is Your Father at Home?" illustrating the young lady standing on the edge of a piazza, the latter decorated with beautiful foliage, while the young man stood on the steps, asking the question. His portrait study entitled "Mischief" was very good. Mrs. N. Gray Bartlett had a set of fine figure studies, which were not quite equal to some of her pictures in other sets. This time she has a very pretty young lady as a model, and poses her back of a house, with a handsome dress on, seated, peeling apples for apple pies, but the pose is graceful and accessories properly subordinated. There is much promise in her work, and it is a pleasure to note in general the tendency toward new figure effects and studies which pervade this set, in place of well worn landscapes. Following the Chicago slides were those of the Toronto Camera Club, new to the Interchange this year. There was an excellent variety of subjects and good technical quality in the work of this club. The slides of special merit and attraction were those illustrating Toronto architecture, by A. W. Croil and W. H. Moss; portrait studies by F. Jeffreys and W. B. Varley; genre study, by J. J. Woolnough, in two slides, entitled, "Two's Company"—"Three Is None," illustrating a familiar adage very perfectly; another, also by him, was "The Lady and the Tramp," a very fine and artistically arranged landscape called "Fording the River," by Mr. W. Bohne; very pretty animal picture of a group of horses, by Mr. W. H. Moss; a moonlight scene, by Dr. Harold Clark; and an amusing figure study, "Meals Served at All Hours," by Dr. E. E. King. The club is a decided addition to the Interchange, and its work is well received and highly spoken of everywhere.

A few slides from flash light negatives, showing the interior of one of the deepest and largest slate mines in the world, on the coast of England, contributed by Mr. Walter E. Woodbury, were shown. Then followed three slides by Mr. A. W. Montant, of the New York society, illustrating snap shots on Broadway near the Post Office during a snow storm, when large flakes are falling. The effect was remarkably good, and the slides were of excellent quality.

The exhibition ended with a set of seventy slides, the prize set of the AMERICAN AMATEUR PHOTOGRAPHER, covering the results of two years of competition, '93 and '94. The marine views of Wm. B. Post were especially fine. The same may be said also of Miss Emilié V. Clarkson's slides. Dr. Charles L. Mitchell's silver medaled set, illustrating glimpses of the interior of Westminster Abbey, were charming in their soft tone, fine gradation of light and shade and artistic quality. The other silver medal, awarded for architecture to Mr. E. R. Ashton, of Tunbridge Wells, England, was for beautiful slides illustrating an entirely different style, that is, the mosques and oriental architecture. Mr. Ashton had figures nicely located to show the size of the buildings. Mr. S. L. Coulthurst, of Manchester, England, has a nice selection of slides in this set illustrating the noted Fountains Abbey. His interior of the crypt was remarkably well done. This was the first time the prize set had been publicly exhibited, and was very well received; it should give pleasure and instruction to many clubs. The exhibition terminated shortly before 10 o'clock.

**AMERICAN LANTERN SLIDE INTERCHANGE.**—In January the 1893 "Photography" prize slides were received, a few missing and several broken, leaving 166 in the set. They are reported to have come from Capetown, South Africa, where the list was lost. The slides are pressed together in the box in one mass by a strong spiral, much in the manner of pushing springs used in magazine hand cameras. Being  $3\frac{1}{4} \times 3\frac{1}{4}$  in size, it is supposed they are not to be as easily damaged as larger sizes, but the first short trip of this box for a distance of ten miles in the hands of an American express company so damaged many other slides that rubber-grooved boxes had to be provided. It is a very interesting set, and will prove an attraction to the friends of the clubs who exhibit it. There has been some delay in the sending of a set of slides by the Photographic Society of Courtrai, Belgium, also by the Photographic Society of Japan. The latter society is to send a set of slides colored by Japanese artists.

The prize set of slides of the AMERICAN AMATEUR PHOTOGRAPHER are also available for the uses of the Interchange, and will, it is expected, be in demand on account of their fine quality.

Negotiations with the Royal Photographic Society of London for an annual interchange of slides have resulted in the prospect of a splendid set of slides being sent here for exhibition among American societies next fall. A communication lately received from the Assistant Secretary, R. Child Bayley, states that the matter has been referred to the Affiliation Committee of the society, which, it is thought, will succeed in its endeavor to get up a set by next August. The Affiliation Committee is in touch with all the affiliated societies, and will have functions similar to the Executive Committee of the American Interchange.

The Elizabeth Camera Club, of Elizabeth, N. J., has recently been admitted as a member of the Interchange, Dr. E. D. Frost being the Director. Mr. Sam J. Latta is Director for the Memphis Camera Club. Mr. C. H. Hibbard has been elected Director for the Minneapolis Club, in place of Mr. A. L. Eidemiller, who was obliged to resign, and Mr. John S. Paterson succeeds Mr. W. W. Byington as Director in the Albany Camera Club. All Directors are requested to report promptly to the General Manager the condition of slides and date of shipment.

**PHOTOGRAPHIC SECTION OF THE AMERICAN INSTITUTE.**—The regular monthly meeting, which was to be held on Tuesday, January 1st, was postponed to January 15th, President H. J. Newton in the chair. Secretary Oscar G. Mason made a few announcements, and remarked that the person who challenged the Section some time ago in the name of A. C. Lizzard had not made himself known as yet, and nothing had been done. The meeting began with an exhibition of lantern slides, selected from Mr. Alfred L. Simpson's collection and were explained by Mr. Simpson himself. They consisted of a comparison of the 1889 Paris Exposition buildings with the Chicago World's Fair Buildings, views in Paris and several very realistic fire pictures. A vote of thanks was accorded to Mr. Simpson. The President read a paper on "A New and Modified Method of Developing Photographic Prints on Paper with Coal-tar Products and Alkaline Solutions."

Quite a discussion followed, and in reply to several questions, Mr. Newton enlarged on the particular points of note in his new method. He is not satisfied with ordinary hypo as a fixing agent, held that it caused flatness, and to get most brilliant results preferred the use of hypo-sulphite of ammonia. In printing on bromide paper he remarked that the print should not be carried or developed beyond the

depth wanted. The effect of the hypo is to make it darker, a trifle more than one observes the print in the developer.

He called on Mr. F. C. Beach to explain his experience, who spoke in part as follows:

Ladies and Gentlemen, I did not expect to say very much this evening, but I want to take exception to one point, and that is in regard to Mr. Newton's remarks on the photographic journals. I had some experience with photographic journals some years ago, when we organized the Society of Amateur Photographers, and it was my privilege later on to be connected on the start with a new journal intended to be on the same lines as the society was started, that is, it should be independent of all trade interests and work for the best interests of the amateurs and other photographers, so I want to say distinctly that any remarks on the journals in general by the President cannot possibly apply to the AMERICAN AMATEUR PHOTOGRAPHER, because we are entirely distinct from any trade interests.

In regard to bromide paper, I experimented on this as early as 1881, and probably was among the first in this country to import it from England and test it. At that time I had no dark room here to work in, but through the kindness of Mr. George G. Rockwood, who then had a properly fitted up dark room for bromide plates, I was given the privilege of its use. There I made my first experiments and tested the bromide paper sent me by Morgan & Co., London; none could be had in New York, so I was obliged to import all I used. I have been using it ever since very extensively. At that time the only developer recommended for bromide paper was the ferrous oxalate developer, and I found it was very good when it was fresh, but after you had developed three or four prints in the solution and dried them, a yellowish color would be noticed on the back of the paper, due to the precipitation of the iron salts. This was a great bother, and in 1889, I think it was, a new developer came out, the coal-tar developer, known then as eikonogen. I experimented with that on bromide paper and found it worked most admirably. I could develop with eight ounces of the solution ten or twelve 10 x 12 prints, and the last print when it was fixed and dried was just as clear and white on the back as the first print. I immediately adhered to the use of that developer, and have been using it now for the last five and a half years.

Mr. Newton kindly told me one day of his improvement in bromide paper developers, and I visited his house and saw the experiments. They certainly worked very well, and since then I have tested this formula, and I have brought here tonight the negative and some prints. (He then passed around four different prints from the same negative; one was developed with the simple eikonogen developer, sulphite of soda and carbonate of potash, a very small quantity of carbonate of potash. Another with Mr. Newton's metol-hydroquinone and soda developer, without the bicarbonate of soda added, and another with the lime water added.)

He said about them: "With all due respect to Mr. Newton's remarks in regard to the restrainer, etc., I think the results can be got just as easy by using a very little alkali in the solution, and not much restrainer, if any, and simply give the proper time. That seems to be the main point in bromide printing. I can get very good results with most any good developer." He noticed that the print brought out by Mr. Newton's developer came up very rapidly, and developed very quickly, contrary to what he had heard stated. He found the lime water print developed out much weaker than the one developed with soda.

Mr. Newton, in reply, had no doubt that equally as good results could be obtained

with other developers than his, but he advocated bromide papers, because with them permanent prints could be made. That was the main claim for this kind of prepared paper. Speaking of the ferrous oxalate developer, he said it was used now as he prepared it long ago. Willis brought over from London some prepared ferrous oxalate salt, and gave it to me confidentially to try, about which he spoke later.

Mr. Champney remarked that he had not arrived at any definite conclusion regarding the permanency of the prints. He thought the collodion print was in the minds of most artists the desirable thing and bromide came next. Certainly, Mr. Newton's results with his printing and developing process are very beautiful. Artists generally strongly object to high gloss on paper prints.

Mr. Beach stated that metol and hydroquinone seemed to be considered one of the best combinations known for a general developer. There is a sort of a staying quality about it that enables one to develop a large number of prints of uniform quality and strength, and another feature is that the developer keeps clear and scarcely stains the fingers.

Dr. John H. Janeway spoke favorably of the staying and clear qualities of this developer, but thought it an injustice to limit the qualities to those two. It is found that hydroquinone, with very little over-exposure, is apt to give considerable harshness, either to the print or to the negative. Metol produces just the reverse; hence, when the two are put together a grade is reached which, in his opinion, was what was wanted—a grade neither too harsh nor too soft. He thought President Newton obtained a saccharate of lime instead of a hydrate when he mixed sugar with lime water and crystallized it out. Mr. Newton held that it was a hydrate and substantiated his opinion by saying that the most approved works on chemistry so stated it.

Mr. Cornelius Van Brunt regarded Mr. Champney's view of bromide prints as about right. He thought the evidence showed conclusively that these prints, if properly made, were permanent.

President Newton put the question, "Why is not the process adopted?" Mr. Beach replied probably because it takes a great while for people to get used to new things, sometimes as long as ten years before photographers appreciate and understand them.

President Newton knew from his own experience that it takes time for people to understand the advances discovered. He called to mind how many years it took him to convince photographers that they could get just as good results with more certainty, by using carbonate of soda as an alkali, in place of ammonia, in the developer. He hoped the old silver process was going out, as the bromide print would surely not fade.

Secretary O. G. Mason was called upon, and said he had seen Mr. Newton prepare his developer and work it. The one point which impressed him most was that it was under perfect control, so that a dozen or more prints could be developed at one time with certainty and success. When we can take bromide paper, put it in our printing frames as we do albumen paper, which requires no experiment, when we can do that with as easy manipulation as we do with the albumen paper, by simply exposing only a few seconds to an ordinary gas light and can then develop the image so easily, it opens to us a field that has heretofore been untrodden except by a few. It will enable us to make prints regardless of the weather. He also alluded to the ingratitude amateurs had shown him in using points he had given them to their commercial advantage.

President Newton closed the discussion by saying that it was his effort to compound a developer for prints that gives perfect control, and he believed he had found it. With the ferrous oxalate you cannot have that perfect control, and then, after using it a few times, a yellow color is given to the paper. I do not think it is a good developer, and I know about all there is to know about that developer, because I put it in its present marketable position. I developed it from a crude state, when it was given me by Willis, of London; I put it into its present form. We had to pay \$2.50 a pound for the oxalate of potash then, and with it we made ferrous oxalate in the form of a dry powder, which we dissolved to form the developing solution. It was a tedious thing to do; I worked it up until it reached its present marketable form.

## NATIONAL PICTORIAL PHOTOGRAPHIC SECOND COMPETITION, 1895.

### CONDITIONS.

Only competitors residing in either the North or South American Continents will be eligible to enter this competition.

Every competitor shall send in four prints.

The pictures submitted must be exposed, developed and printed by each competitor without assistance.

At the close of the competition the mounted prints will be sent to London, England, and judged there by two acknowledged leaders of pictorial photography. Their verdict will be final.

Each competitor is required to pay the AMERICAN AMATEUR PHOTOGRAPHER an entrance fee of five dollars at the time the prints are sent, the aggregate amount, after the deduction of expressage expenses to and from England, to be used in the purchase of three prizes of silverware, appropriately inscribed; fifty, thirty and twenty per cent. to go to the first, second and third prizes, respectively.

In case only two prizes are awarded, the division to be sixty and forty per cent.; if only one prize, the winner to get all.

After the judging is completed and the prizes are awarded, all the pictures will be returned to this country and the collection exhibited, from time to time, in the principal cities of the United States, and finally returned to the contributors.

In case there should be less than six entries the competition will be declared void, and the entrance fee and submitted photographs will be returned to the senders at their expense.

In case the pictures submitted are regarded by the judges as below the required standard the pictures and entrance fee will be returned, less the *pro rata* cost of transportation.

No entry forms are required, but competitors must send a list of prints, each to be marked on the back with an assumed name or symbol, and numbered, the list to be enclosed in a sealed envelope bearing on one corner the same name or symbol that is put on the prints.

The prints must be mounted, the package addressed and sent prepaid to "American Amateur Photographer Pictorial Competition," 239 Fifth Avenue, New York.

All entries must be in by October 15th, 1895.

## Large Direct Photographs.

IN regard to the article on the largest photographs in the world, published recently in the columns of THE AMERICAN AMATEUR PHOTOGRAPHER, we present our readers with a description of the photograph which is said to be unsurpassed in respect to size and first-class technical qualities.

The picture in question was exhibited at the last Photographers' National Convention, held in Chicago, where it obtained a special silver medal, and is still on exhibition in the office of Benjamin French, a Boston dealer in photographic goods. The photograph, a life-size three-quarter length portrait of a lady, is a direct Albumen print of a 36x60-inch negative, from life, and is, so far as known, the largest direct dry-plate negative made in the United States, if not in the world. The negative was made on  $\frac{1}{2}$ -inch plate-glass weighing over 80 pounds. The first developer poured over the plate was three large pails-full in quantity. Although a small diaphragm was used, the time of exposure did not exceed 10 seconds, and the definition is uniformly clear and correct from one end of the plate to the other. The illumination of this huge plate is simply phenomenal, being surprisingly uniform without the slightest falling off at the edges, and, at the same time, the portrait possesses considerable roundness and depth of focus, qualities so desirable in portraiture. The photographer was the inimitable Tom Burnham of Boston, who was a very unique character. One of his feats consisted in making a trip through England and France, accompanied only by two lenses capable of making large-sized negatives. When in London he contrived to collect sufficient money to enable him to purchase a small covered wagon which he converted into a huge wet-plate camera, which also served him as a sleeping apartment and lunch-room. With this improvised and unique outfit, he photographed such famous persons as John Bright, Gladstone, Morley, Bradlaugh and others, photographing also the most notable buildings in London and Paris, all the negatives thus made being of huge dimensions. The camera used in making the large 36x60 portrait was also improvised, and persons who witnessed the taking of this large picture were greatly amused, as Tom Burnham, himself a six-footer, clambered up and down a tall step-ladder when focusing the image.

The process of procuring albumen prints from the immense negative was as unique as it was original, a huge marble table being used in place of a printing-frame, the weight of the negative insuring uniform contact with the paper.

Besides the large photograph mentioned, Tom Burnham made what is generally conceded to be the finest portrait of the size ever made in this country. This is a direct 11-inch head from life of Mr. Benjamin French of Boston. Like the aforementioned portrait of a lady, it was exhibited at several conventions as well as abroad, and brought the author several silver medals of much renown; which latter, unfortunately, were never utilized advantageously.

The lens employed by Mr. Burnham was a No. 8 Euryscope, series 4, the full combination being employed, and not, as was formerly maintained by several of Mr. Burnham's competitors, the back-lens alone.

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THE DANGER OF FLASH LIGHT POWDERS.—The danger in the careless handling of the new fashioned prepared flash powders that go off so instantaneously, was forcibly illustrated by an accident that happened recently in Philadelphia. The following is the report taken from the *Philadelphia Press*, of December 19th:

"A trunk containing flash powder was blown to pieces last evening on Cuthbert

Street, near Tenth, and an expressman named David S. Hewitt, 34 years old, 810 Taylor Street, was painfully injured. His left leg was shattered, and it is feared that it will have to be amputated to save his life.

"Hewitt placed the innocent-looking trunk on board his wagon at Broad Street station of the Pennsylvania Railroad, and was told that the trunk was to be delivered at the store of H. McCollin & Co., on Arch Street, above Tenth. Hewitt went to the rear entrance on Cuthbert Street. He was unaware of the contents of the trunk, and while unloading it, it slipped from his grasp, fell on the pavement, and the powder exploded.

"A tremendous report was heard, the street blazed with a fiercely burning light, Hewitt was blown several feet away, and three windows in the neighborhood were shattered. Hewitt was taken to the Hahnemann Hospital."

We presume this was a trunk of Blitz Pulver by its being taken to McCollin's store. Somebody ought to be held to account for shipping an explosive in that manner without any warning notice. It may have been done to evade the embargo on shipping vessels liable to explode, lately ordered by the express companies.

Such occurrences have a tendency to confirm in the minds of the officials the necessity of the precautions taken. Amateurs should be cautious how and where they store small quantities of this dangerous powder, if they have any consideration for their eyes or feet.

## PHOTOGRAPHS RECEIVED.

Mr. F. W. Higgins, of Detroit, Mich., sends us a batch of prints for criticism. Considering that this gentleman tells us that he is but a beginner in photography, and that his facilities for work are not very great, the prints are fair. They are naturally not up to the standard as photographs, for the negatives are certainly flat and probably overtimed. The lighting is poor. Beginners ought to photograph snow scenes when the sun throws long shadows—they are easiest then. The photographs do not show much taste in selecting the point of view. As for the portrait, it is a trifle harsh; still, it is the best of the lot. With a little more experience Mr. Higgins is bound to improve.

Mr. Thomas Hindle, of Jamestown, N. Y., sends us three photographs for "*Candid Criticism*." All three photographs show a decided attempt at picture making, and though the results are far from satisfactory, they are at least promising. "Chick Chick" would be decidedly good if cut down considerably, so as to give more prominence to the subject itself. The greatest fault, though, lies in the fact of all the planes being of equal value, everything is equally sharp and prominent. If possible, Mr. Hindle ought to try this picture over again, and give as much prominence to the chickens and figures as possible, and throw everything else decidedly out of focus, besides choosing the lighting in such a manner as to make the picture interesting.

"A Pleasant Afternoon" lacks concentration, still, taken as a whole, it is decidedly above the average generally submitted to us. With the same material as used a good picture might be made, if following the same lines as laid out in the previous remarks.

"Spring Time" has the same faults as the two pictures criticised; there is no concentration and too much prominence is given to ugly accessories. The two little barns are not picturesque, and the lighting must therefore be chosen in such a manner as to subdue them as much as possible. The picture has too little foreground to



be well balanced; one has the feeling as if the house would fall out of the picture if it were to move a step or two forward. This is a common fault in many otherwise good pictures. All three pictures would probably be improved if printed on platinum paper.

### Editorial Table.

**ROSS LENSES.**—Mr. G. Gennert, No. 2, East 13th Street, New York, sends us a copy of an official letter from Ross & Company, of London, appointing him as the sole American agent of their lenses. He will keep a complete line of lenses, including the Ross Zeiss lenses, made under license from Carl Zeiss, of Jena, and the newly invented Goerz Double Anastigmat lenses, under a license from C. P. Goerz, Berlin-Schoeneberg, Germany. We have seen a test chart made with the Goerz lenses, having an aperture of  $f/11$ , which shows remarkable definition. The Seraph combination of lenses sold by this house is unique in its quality, compactness and utility. We are advised that the sets so far introduced have given excellent satisfaction.

**POLARISCOPE ATTACHMENTS TO THE ELECTRIC LANTERN.**—We show in the accompanying engravings new attachments to Colt's well-known electric lantern, which carry out his idea of interchangeability of parts very perfectly. The large picture shows the lantern in position for projecting polariscopic objects. The smaller view illustrates the different microscopic tubes attached to a rotating disk, permitting any one of them to be readily brought into position. This arrangement is not only quite compact, but the adjustments are very convenient. We are informed that the Colt apparatus is in use in many schools and colleges where electricity is easily had, and the facility in projecting diagrams and other pictures in a room not darkened adds much to its usefulness as an aid in teaching.

**METOL AND QUINOL DEVELOPER.**—From the Nepera Chemical Company, Nepera Park, New York, we have received a small tin package of this prepared developer, put up in powdered form, said to contain an ounce. The contents are dissolved in 16 ounces of water and diluted twice or four times with water as may be desired, when used as a developer for bromide paper or lantern slides. We find it produces excellent results; is stainless and durable. Prints with clear whites and a velvety brown black are easily obtained.

### PHOTO-MICROGRAPH ATTACHMENT.

NEW POLARISCOPE ATTACHMENT TO COLT ELECTRIC LANTERN.

## UNITED STATES PHOTOGRAPHIC PATENTS.

*September 4, 1894.*

- 525439. Camera Shutters. J. E. Blackmore, Newark, N. J.
- 525458. Photograph Mount. D. R. Hanawalt, Philadelphia, Pa.
- 525512. Sensitized Photographic Paper. W. H. Prestwich, London, England.
- 525608. Photograph Print Mounter. H. A. Lesure and D. D. Dunklee, Greenfield, Mass.
- 525654. Photographic View Finder. J. J. Hicks, London, England.

*September 11.*

- 525719. Cabinet Album. J. M. Ray, Hamilton, Ohio.
- 525849. Apparatus for Developing Photographs, etc. M. F. Mackusick, New York, N. Y.
- 525899. Photograph Flash Lamp. A. Hemsley, Philadelphia, Pa.
- 525991. Series Photographic Camera. M. Mayer, Munich, Germany.

*September 25.*

- 526445. Folding Roll-Holding Camera. D. H. Houston, Hunter, N. D.
- 526446. Roll-Holding Photographic Camera. D. H. Houston, Hunter, N. D.
- 526471. Camera Shutter. G. A. Waters, Lansingburg, N. Y.
- 526661. Flash Light Burner. M. D. Westcott, Cortland, N. Y.
- 526662. Flash Light Burner. M. D. Westcott, Cortland, N. Y.

*October 9.*

- 527056. Photographic Head and Body Rest. W. H. Gilson, Blanchard, Iowa.
- 527204. Album. C. Jaeger, New York, N. Y.
- 527315. Photographic Burnisher. W. H. Boles, Syracuse, N. Y.

*October 16.*

- Design Patent* 23692. Photographic Card Mount. J. P. Odgers, Philadelphia, Pa.

*October 23.*

- 527841. Panoramic Camera. M. Flammang Newark, N. J.

*October 30.*

- 528140. Camera. J. E. Blackmore, Newark, N. J.
- 528155. Lens for Optical Purposes. C. P. Goerz and E. Von Hoegh, Wilmersdorf, Germany.
- 528176. Magazine Camera. G. P. C. Marioniez, Boulogne-Sur-Mer, France.
- 528515. Flash Light Compound. A. Hemsley, Philadelphia, Pa.

*November 13.*

- 529183. Machine for Mounting Photographic Prints. J. W. McCabe, New York, N. Y.

*November 20.*

- 529369. Camera. A. Delug, Munich, Germany.

*November 27.*

- 529820. Focal-Plane Shutter. J. E. Thornton and E. Pickard, Altrincham, England.

*December 4.*

- 530100. Plate Holder. M. Flammang, Newark, N. J.

"Index Rerum Photographic," by Dr. John H. Janeway, U.S.A., continued from page 94, vol. vii.

stream, stirring rapidly all the time. Keep it in a corked stock bottle and take out as much as may be required for the time. Work it up nicely with the brush, and you will have a material as smooth as cream, without lumps or grit, and which will not decompose.

*Caseine Mucilage*—Heat milk with a little tartaric acid, whereby caseine is separated. Treat the latter while still moist with a solution of 6 parts of borax to 100 parts of water and warm gently while stirring, which will cause the caseine to be dissolved. Of the borax solution enough should be used to leave only a little undissolved caseine behind. This is a very serviceable, adhesive mucilage.

*Dextrine*—Pure white dextrine 1 ounce, boiling distilled water 3 ounces, alcohol  $\frac{1}{2}$  ounce. Stir until dissolved and strain through calico.

*India Rubber*—Pure rubber 80 grains, benzole or chloroform 8 ounces. Shake till dissolved.

*Gelatine*—Cooking gelatine 1 ounce, alcohol, 95 per cent., 10 ounces, glycerine  $\frac{1}{2}$  to 1 ounce. Soak the gelatine in cold water for 1 hour or more, take out and drain off all the water which will go. Add to alcohol in a wide mouth bottle, add  $\frac{1}{2}$  to 1 ounce of glycerine according as the gelatine is of hard or soft kind. Put the bottle in hot water, with occasional shaking until the gelatine is dissolved. Will keep indefinitely, and has only to be heated when wanted for use. Apply rapidly and thinly as possible with a broad bristle (varnish) brush.

Another: Nelson's No. 1 photo-gelatine 4 ounces, water 16 ounces, glycerine 1 ounce, alcohol 5 ounces. Dissolve the gelatine in water, then add the glycerine and lastly the alcohol. It is stated that prints mounted with this will not cockle.

*Gum*—Add to 250 c. cm. (8 ounces, 3 drachms, 37 min.) of concentrated gum solution (2 parts of gum to 5 parts of water) a solution of 1 gramme (15 $\frac{1}{2}$  grains) of sulphate of alumina in 20 c. cm. (5 drachms, 25 min.) of water. Alum does not answer the purpose as well. The addition of the sulphate is effective, in that this gum cannot be injured by weak lime paper, and besides wood can be pasted upon wood by means of it. Its adhesive qualities are in general greater than those of pure gum arabic. A paste that will not draw engravings when pasted down on paper must be thin. A mixture of equal parts of gum tragacanth and gum arabic forms with water a thinner mucilage than either one alone.

*Glue*—Soak ordinary glue in water, remove it before it has lost its original shape, and dissolve in ordinary linseed oil over a gentle fire, until it acquires the consistency of a jelly. This paste may now be used for all kind of substances, as, besides strength and hardness, it possesses also the advantage of resisting the action of water.

*Liquid Glue*—With any desired quantity of glue, use ordinary whisky instead of water. Break the glue

in small fragments and introduce them in a suitable glass vessel, pour the whisky over them, cork tightly and set aside for three or four days, when it will be ready for use. Will remain liquid except in very cold weather. Another : Glue 8 ounces, water 8 ounces, nitric acid, c. p.,  $2\frac{1}{2}$  ounces. Dissolve the glue in the water by immersing the vessel containing it in hot water. When the solution is effected add the acid. Effervescence will take place with evolution of orange colored nitrous fumes. Now cool. It should be kept in a well stoppered bottle, and will remain permanently liquid. Very serviceable as a cement. The following is very serviceable in gumming large sheets of paper, which may be kept on hand ready for use. When wanted, they will stick well on glass. Starch 2 drachms, white sugar 1 ounce, gum arabic 2 drachms, to be boiled with a sufficient quantity of water. The same mixture can be used in making adhesive mounts upon which moist prints will adhere by pressure only.

**MOUNTING**—Is the method adopted to cause prints to adhere to their support, such as cards, cloth, wood or glass, either for ornament or the better protection of the print itself. As the mounting of the print in *all cases* is the making of it, the amateur should pay much attention to it. The choice of suitable color and size is of much importance, and the extent of margin to be allowed is to be carefully considered ; if it is desired that additional artistic effect is to be produced, color of the mount has considerable influence in the appearance of the print, and some colors are disastrous to its life. Size of the mount is often objectionable, being sometimes too large and again too small, leaving either too much or too little margin, in either case, strange as it may appear, dwarfing the picture. The print should be accurately in the center of its mount. In order to do this, if one's eye is not straight, as it is sometimes called, it is well to draw a straight line with a pencil the length of the print a suitable distance from the top of the mount, and intersect this line by two perpendicular lines equidistant from the ends of the mount representing the two ends of the print. If the print is rectilinear, it will be found to be properly centered on the mount. Elaborate diagrams have been freely published for this, but the above will be all that is needed. For the purpose of mounting one should be provided with two or more brushes of different widths, varnish brushes of bristles. Avoid all that have metal and especially tin fastenings. Hard rubber ones are preferable, and after use they should be carefully washed, and also an India rubber roller squeezer. Prints are mounted either dry or moist, according to the

mountant used, and also in some cases their previous treatment will enable one to use almost any kind of mountant. Such being the case, they are passed through an anti-cockling mixture before drying, to mount moist. If dry, they should be placed in a pan of clean water—when gelatine is used, hot water—and when thoroughly limp should be removed in bulk and placed face downward upon a folded towel. This will absorb all excess of water. The back of the top print is rapidly and evenly spread over with the mountant used and carefully lifted by the corners, using both hands; the top is gradually lowered on to the line marked, and the rest of the print is allowed to slowly follow. A gentle rubbing pressure is made from the center to each side to insure perfect contact, and smooth out all ridges and air bubbles; when this is done, a piece of cloth or blotting paper is placed upon the print and more decided pressure given by the hand or the rubber roller. It is my practice, after using the roller and being sure of absolute contact, to take the mount between the two hands and bend it into a half circle, the print outward, keeping the thumbs on the two ends of the print tightly, and then setting the mount up on its two ends. I find that they will become perfectly flat before entirely dry. I then remove them to a pressure frame or place them under a pile of books until perfectly dry. Mounting dry is comparatively an easy process, provided the prints are perfectly flat. Very thin tissue prints, such as on India or Japanese paper, are best mounted by the corners only. Prints can be mounted on thin paper, letter or note, etc., in the following way, if the necessary precautions are taken with them beforehand. The prints are taken from the wash and rolled in little bundles, albumen face outward. Each bundle is rolled in a sheet of note or foolscap paper and allowed to dry spontaneously. When the prints are dry, they are flattened and placed in a book or portfolio, and are then ready to be trimmed, if not done previously to toning, which is preferable. They are then treated to a thick solution of shellac, bleached shellac dissolved in alcohol, and mounted in the usual way. The only precaution to be taken is that the shellac must not be allowed to get on the face of the print, as there is no means of removing it. For mounting prints by optical contact with glass, make a solution of Nelson's X opaque gelatine, 20 grains to the ounce of water, and while still warm immerse the print face downward in it. Place the glass also in the solution, and after a few seconds bring them into intimate contact. Withdraw from the solution, squeegee thoroughly, and allow to dry. Prints with high, glossy surface can be mounted so as to retain their gloss by squeegeeing the moist print to ferrotype plate

or glass previously prepared with French chalk. When nearly dry, coat the back with the mountant and apply to the mount, using the squeegee vigorously. When dry they are easily stripped off from the plate or glass.

**MOUNTING LARGE PRINTS**—If mounting on cardboard 22x26, have a stretcher made of 3 inch strips well put together, 23x27 outside measurement. This allows  $\frac{1}{2}$  inch in margin over the cardboard. Mount the print as usual on the dry cardboard, place it face down on the stretcher and cover the back with a piece of strong manila paper large enough to bind the print and cardboard securely to the stretcher. Allow it to remain on the stretcher until thoroughly dry. If the back paper is poor, the contraction will break it loose from the stretcher, and the desired effect will not be obtained. If first quality of paper is used, it will hold it securely, and when the cardboard is cut loose it will be as straight as the original cardboard and will remain so. Large views mounted in this way can be placed in portfolios, on easels, etc., with some pleasure, and will not be like a lot of stovepipes.

**MOVING PENDULUM, Photographing of**—This opens the question as to how much movement can be allowed to an object which shall not be detected in the blurring of the image, and also as to the relation between the distance, speed of object and time for instantaneous exposure in photographing a moving object. Thus the 1-100 of an inch is a distinctly visible quantity. A movement during the time of exposure which would produce on the plate this amount of displacement would tend to cause a blur. By one high authority the amount allowable is placed at 1-250 of an inch. It is uncertain how far this can be accepted as an absolute law.

**MULTIPLYING NEGATIVES**—Obernetter's dusting process for multiplying negatives. A specially prepared sensitive plate, exposed under the negative, receives an impression which is developed by powdered graphite, which adheres to the plate affected by light. From this positive any number of negatives can be printed off. See Printing Processes.

**MURIATE OF AMMONIA**—Sal Ammoniac—See Ammonium Chloride.

**MURIATIC ACID**—Hydrochloric Acid—See Acids.

## N

**NAPHTHA**— $C_{10}H_8$ .—True naphtha is a hydrocarbon which occurs naturally as mineral naphtha in the rocks of Pennsylvania and Canada and less abundantly in certain parts of Europe and Asia. Coal naphtha is a nearly identical substance obtained by distillation from coal during the manufacture of coal gas. Naphtha is a clear, limpid, oily liquid, which burns with a bright, smoky flame. It will not mix with water, but is a good solvent for caoutchouc (India rubber). Owing to its freedom from oxygen, it is used to protect the metals sodium and potassium from the air, the bottles in which they are preserved being kept full of naphtha. The term "wood naphtha," or vegetable naphtha, is sometimes applied to "wood spirit" (methyl alcohol), but this is a misapplication, as the latter is a very different substance.

**NATURE, STUDY OF**—Art knowledge depends upon the study of nature in its aggregated relations. In a good picture these are judiciously preserved; everything is in keeping and harmony; not any one object or part showing the least deception, for if it were so the others could not be true, but all are true with relation to each other. Such a representation of Nature may not satisfy the mind that has recorded some isolated facts and is ignorant of others; but to him who has kept his eyes open to Nature's works in their harmonious unity, it will be a revelation of their author. Nature requires the closest kind of study in all her varying moods, in order to acquire a certain amount of ability to interpret her expressions, supplementing this with a familiarity with the works of her best interpreters. Browning has, I think, said that paintings teach us to notice things in Nature that never would have been noticed by us but for the paintings.

**NATURAL COLORS, PHOTOGRAPHY IN**—Every few years pretensions have been made in connection with some old abandoned or repatented methods of applying paint, etc., to photographs and deluding the unwary. For the latest advance in this subject refer to Color, Natural Photography of.

**NATURALISM IN PHOTOGRAPHY**—In keeping to the old, well-tried rules of art, the photographer need not neglect what is good in the new. He must study "values," not that he may render them accurately as they are in Nature, for that is mechanically and absolutely done for him in a properly exposed and developed plate, but that he may create them before he renders them—a thing that an orthodox naturalistic painter would disdain to do. If he has a gray land-



scape to photograph, he must exercise his invention and ingenuity to introduce some dark or light object in the foreground to give value to the misty scene. This is the use which a study of value can be to a photographer. Study art if you want to make pictures. You cannot learn by studying nature only. Nature does not teach art, but she will make suggestions to you when you have learned to see them. Let your picture look as if you wanted to do the best with your subject. Let it show that it embodies a thought, however poor the thought may be, and to some extent, however indifferently the thought may be expressed. You may not succeed, but it will be plain to an expert whether you have tried or not. When you fail, hunt down the failure. Never be satisfied, if you want to succeed. Fix this admirable definition of *art* in your memory: "Art is interpretation by means of a creative idea, and never a stupidly exact copy."

NEBULÆ—Prof. Pickering has just published an interesting paper upon the discovery of nebulæ by means of photography. He has compared with the catalogue of known nebulæ five photographic plates, which cover a certain region of the sky extending about  $15^{\circ}$  north and south by  $10^{\circ}$  east and west and having the great nebula of Orion nearly in its center. In the region photographed the nebulæ catalogue of Dreyer indicates 18 objects; 14 of these appear upon the plates, 4 do not, but 2 of these are indicated by Dreyer as merely "suspected." On the other hand, 12 new nebulæ are shown on the photographs which are not given by Dreyer, and 5 of them are really interesting objects as regards their form and detail, or on account of their connection with certain stars. It is obvious that the number of known nebulæ is to be much increased by photographic observation.

NEGATIVE—A negative may be said to be a pictorial representation which, on looking through it at a bright light, shows all the shades which are seen in any object represented reversed. Thus when we look through a landscape at a bright light we see the sky and all objects, which are in reality brightest, represented as dark, while the darker parts of the landscape are represented by the bare and transparent glass.

NEGATIVE, DEFECTS IN—See Faults in.

NEGATIVE FROM NEGATIVE, TO COPY—A thin negative exposed to the light of a gas burner for 45 minutes and at a distance of 10 to 12 inches from the source of light and developed with pyro 4 parts,

*To be Continued*

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Our Lenses are BETTER than ANY European product, you may doubt us.

## **IF we say**

Our Lenses are as GOOD as the BEST, you MAY believe us.

## **IF we say**

Compare our Lenses with those which YOU consider best, we secure your confidence.

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## SALE AND EXCHANGE.

[This department is for the benefit of SUBSCRIBERS who have photographic material, apparatus or books which they wish to exchange, and such wants will be inserted free of charge one time. For each additional insertion we will charge one dollar per month. Dealers advertising in these columns will be charged double our ordinary advertising rates.]

*Wanted*—A 5x7 Roll Holder for a No. 2 Folding Hawk Eye. Address J. G. Stoerr, 3125 Portland Ave., Louisville, Ky.

*For Sale*—3½x3½ Bullseye Camera, in perfect condition, \$4.50. I want a first-class 8x10 View Outfit, and will give in exchange, Homing Pigeons, Fancy Pigeons, Fancy Rabbits or Fancy Poultry. I also want a good 5x7 Hand Camera, in good order. Correspondence solicited. Robert Halford, Sanford, Me.

*Exchange*—Will exchange complete Ferrotype Outfit (4¼ plate lenses, &c.), for Lantern Slides in good condition. Write for particulars. Jacob Harvey, 610 East Avenue, Roanoke, Va.

*For Sale*—A 5x7 No. 5 Folding Kodak, with Roll Helper and Plate Holders, Tripod, etc., etc., fine condition. Samuel F. Owen, Saginaw, Mich.

*A New Platinotype Card Mount*, "The Davison" (registered), well adapted to all photographs. Send for sample. Willis & Clements, 1624 Chestnut St., Philadelphia.

*Wanted*—A brown duck photo tent in good order. State size and lowest price, or would exchange \$36.00 Cincinnati Camera Box. Jacob Harvey, 610 East Avenue, N. E., Roanoke, Va.

*For Sale*—I have 4x5 Blair Camera B. & L. shutter, 2 lenses, 12 plate holders and developing outfit for sale cheap for cash. Also No. 3 Kodak. Walter Kimbark, 80 Michigan Ave., Chicago.

*For Exchange*—Self Inking Excelsior Printing Press, No. 4, cost \$44.00, been used but little, for 5x7 View Camera with Lens and Tripod. Correspondence solicited. E. H. Newbury, Lock Box 5, Mystic, Conn.

*For Exchange*—A fine 26 line jointed tubes Lemaire field glass, cost \$30.00. Will exchange it for a good optical lantern, in fine condition, of equal value, or if greater, will pay difference. Address, E. B. White, P. O. Box, 405, Houlton, Maine.

*For Sale*—One Entrikin Eureka Burnisher, 7 inch roller, and 1 paper cutter, 6 inch, both as good as new. John E. Davis, Butte, Mont.

*For Sale*—4x5 Premier Camera, Rapid Rectilinear Lens. Six plate holders and roll holder for 44 exposures. Cost \$35.00. But little used; will sell very cheap, or exchange for 5x7 ordinary outfit. C. F. Rodgers, Conneaut, O.

*Wanted*—A 3¼x4¼ in. plate, Anthony's Bicycle Camera, for cash or exchange for Queen's slide tube Microscope, three objectives, about 40, 100 and 200 diameters, in rosewood box. J. Siler, 1006 S. 7th St., St. Louis, Mo.

*For Sale*—A Laverne 4x5 combination lens with Iris diaphragm and registered shutter. Lens in perfect condition. Original price \$40.00, will sell for \$22.00. Frederick Earle, 1530 N. Cascade Ave., Colorado Springs, Colo.

*To Exchange*—A gold pen with ebony holder for anything in the photographic line if satisfactory. If you have anything to trade write me. W. F. Jackson, Mayfield, Mich.

Will exchange for camera, etc., 1 Hammond Ideal Typewriter with 3 wheels (1 Mimeographic), a Merritt Typewriter, a Cyclostyle, a Waterman Fountain Pen, a gold pen and holder, microscopic slides in histology; everything first-class. J. K. Ansapach, 1000 Eutaw St., Baltimore, Md.

*For Sale or Exchange*—A 10 in. Entrikin Burnisher, Oil Heater, accurate rotary (double roll), cost \$25.00, will sell for \$12.00, is almost new. Also an 8x10 Portrait Lens, cost \$50.00, sell for \$15.00. Also an 8x10 Blair Extension to fit a 5x7 camera, has two holders, has never been used, cost \$10.00, sell for \$7.00. Would exchange for an 8x10 View Camera. Address, L. B. Shaw, Elmwood, Mass.

*For Exchange*—A Kamaret in perfect order, having been but little used. Price \$40.00; will exchange for 5x7 Premier, single lens, or other good 5x7 hand camera; or will sell for \$25.00. Address E. J. Farnsworth, 26 Elk St., Albany, N. Y.



· MIDSUMMER ON THE HOUSATONIC ·

# THE AMERICAN AMATEUR PHOTOGRAPHER,

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No. 4.

## Photography in America.

(As Viewed by an Englishman.)

BY JOHN BULL, JR.

IT appears to be quite the fashion in these *fin de siècle* days for foreigners to give their opinion of this country as soon as they have resided here but a few weeks, or any way, long before they know anything about it. Americans do not seem to mind these criticisms now. They have apparently become accustomed to them since the days when Dickens wrote "Martin Chuzzlewit," probably in the same way that eels are said to get used to being skinned alive.

It is my intention here to jot down a few notes regarding the state of photography in this country as it appears to my eyes. Whether you imagine that I squint, or that my vision is in any way distorted, it

matters little to me. In self defense, I may say that I am doing this "by special request," and through no particular desire of my own. I have lived in this country many years now, and do not write upon a subject I know nothing about. If my opinions do not agree with yours, I must of necessity be a fool, and you are at perfect liberty to write me down as such. My feelings will not be wounded.

Dividing photography as practised in this country into two branches, amateur and professional, I will deal with the latter first, as I shall have but little to say on the matter, and because I imagine it will be of less interest to the readers of this magazine.

Professional photographers of America can be likened to professional photographers in every other country. One sees everywhere the same kind of show cases, displaying the same assortment of expressionless

faces, with wax-like skins without a characteristic wrinkle even; the same conventional poses, and the same rocks and stumps for accessories. Occasionally one finds a departure from the conventional methods, but these are few and far between. It may be that there is an excuse for this. The professional photographer is but the servant of the public, and what it demands he must supply—or starve—and of the two evils he chooses the one least dangerous to his constitution.

With the growth of art in this country we must hope to see a change.

But it is not so with the amateur. He has no such excuse. He has a large field open before him, if he will take the trouble to enter it. But it would appear that few, very few indeed, care to do this, the majority preferring to walk along the trodden path in company with all the rest.

It has been my privilege, or misfortune, whichever you like, to examine many thousands of photographs made by amateur photographers in this country, and my opinion of the work done here is not a very high one, and I have no hesitation in saying that it is far behind the average work done in many other countries. There are, I believe, reasons for this. Some years ago, when amateur photography was in its infancy here, as well as in other countries, a soulless corporation extensively advertised a camera which only required a button to be pressed and pictures were made. The idea soon took root that there was nothing in photography, when it merely required the pressing of a button. It was apparent that any fool could do that, and when these cameras were purchased and tried, the result convinced the owners of the fact, not only that any fool could do it, but he was a fool a good many sizes larger for doing it. A feeling of disgust and disappointment was created, and there is little doubt but that photography was taken up by thousands and dropped again, when they found out how it had been misrepresented to them. I firmly believe that many of these, had they thoroughly understood what was required to become a successful photographer, would have taken the matter up properly with a determination to master it thoroughly, and would eventually have succeeded.

But what strikes one most in looking over the photographic work of amateurs in this country, is the large amount of careful attention that is given to technical details and the small amount of artistic feeling displayed. A friend of mine showed me a photograph the other day, and expected me to go in raptures over it because it was so beautifully sharp. "Why, look here," he said, "you can actually read that sign on a barn a mile away—'Hood's Sarsaparilla'—the letters are quite distinct." And it was of but little use trying to prove that the advantage of being able to read a patent medicine advertisement did not, in my opinion, lend any additional charm to a landscape.

When an American takes up with photography with the determination to succeed, he usually does it—in a way. He masters the art of making a perfect negative, and from that a perfect positive, and feeling that he has learned all that is necessary, he goes on making perfect negatives and perfect positives of anything and everything that comes in his way. The more he can make, the happier he is. A gentleman inquired of me the other day where he could get rolls of films that would take more than one hundred exposures, as he often made that number in a day, and would like to make more. When I suggested the advisability of making

"EVENING SHADOWS ON THE NILE" BY CHAS. A. SIMPSON.

(No. 84-5, Second Annual Members' Exhibition, Society of Amateur Photographers of N. Y.)

one picture a day instead of one hundred exposures, he was greatly annoyed at the suggestion. He said he had no time to waste. In the latter remark may perhaps be found a key to the mystery why so many thousands of photographs are made here, and so few pictures. The American has got to "hustle." He has no time to waste. Time means money to him, and he takes up with photography, not with the idea of making any money out of it, but as a pleasant pastime and a relief from his ordinary everyday work. But even with his pastimes he has no time to fool around, and the idea of thinking and studying before making an



exposure occurs to him only as a piece of foolishness, resulting in a serious loss of time that might be utilized to better advantage.

I do not wish it to be understood that these remarks apply to all American amateurs, but in my opinion they certainly do to the great majority. I do not know how many amateurs there are in this country, but there must be many thousand, and out of that number there are not more than a dozen who have turned themselves away from the bonds of conventionalism and used the camera for something more than the making of ordinary photographs. They have realized the fact that the camera, usually the master of the owner, can be made to serve him. Their pictures show careful study, serious thought and artistic feeling. They have proved themselves formidable rivals of my own countrymen, and have carried off many prizes from English competitions and exhibitions. But the country needs more of such men and women. There are so few in fact, that at the exhibitions of photographic work held here, their work stands out like a few sparkling diamonds from a huge pile of rubbish.

I gladly admit of having noticed a decided improvement in the photographic work that I have seen in the last few months. I think the change is coming. If amateur photographers will only study the writings and works of the men who have proved themselves able to do good work, there is no reason why they should not succeed in obtaining results that would at least be an improvement upon the ones they are now too readily satisfied with. Nearly every man has the ability of creating an artistic feeling within himself. A well known writer not very long ago wrote an article upon the subject of artistic photography. Judge of his surprise upon receiving a request for a *formula* for making artistic pictures. He wanted it put down in grains and ounces, I suppose. As some guide to the amateur photographer, I would offer the following remarks: When you see a good photograph study it well. Try and find out what it is that pleases you. Is it the posing, the lighting, or the general treatment of the subject? When you take a camera out do so with a purpose. If you want a record of a place or a photograph of an old historical building, why go and make it any way you please, although my advice is to go to a local photographer, who will generally sell you one for a few cents, and save you considerable trouble. If you are aiming at picture making, then your camera and lens should become mere tools in your hands, in the same manner as the artist employs his canvas and brushes. Having chosen your subject, shift your camera a hundred times if necessary, until you get what you want; that is to say, until the objects arrange themselves upon the screen so artistically that there is nothing disturbing or offensive to the eye. The pic-

ture balances, the lines are broken up into one harmonious whole. Next the lighting. Study it well. Do you think that when the sun is lower a better effect will be obtained? If so, wait and see, or mark the spot for the camera, go home and come some other day.

Next, the aperture of the lens. Remember that f-32 is not always the most advantageous stop to use. (I have an idea that some amateurs would use an f-132 if they had such a stop.) Think a little over this matter, for it is a far more important one than you imagine. You may get a sharper image, but it will be a flatter one, and a flat picture is rarely, if ever, artistic. How will your picture look with full aperture when focusing on the principal objects? Do you get an agreeable aerial perspective, a sensation of distance in the distinct objects? If so, let it alone and make your exposure without any stop. Do not worry because you can't read the name on the sign post in the distance. Make two or three exposures if you like, slightly varying the time, and having done this return home again. Your day's work is over. You have not made a dozen exposures because you have a dozen plate holders, but you have made one picture—perhaps. If not, return again and try until you succeed.

I am a great admirer of American scenery. Its gran-

"FLOWER STUDY." BY ALFRED STERN.

(No. 116, Second Annual Members' Exhibition, Society of Amateur Photographers of N. Y.)

deur and magnificence is overpowering, but for photographic purposes it is the meanest kind of scenery imaginable. When dwarfed down to the limits of even an 8 x 10 photograph all its beauty has departed, and it becomes commonplace. And yet amateurs in this country travel miles to get such pictures. They will arm themselves with lenses embracing the widest angle obtainable in order to get as many hundred square miles of scenery into each picture as is possible, and all the time there lies near to their own home a wealth of material from which a hundred pretty pictures could be made. If you were to take all the photographs that receive the highest honors in this and other countries you would be amazed at their simplicity. As examples, take Eickemeyer's "Sweet Home," Stieglitz's "Winter," or "Clements' "Struggle for Existence." They are marvels of simplicity; the subjects so simple, indeed, that the ordinary amateur would pass by them a thousand times and see nothing to photograph, and yet these men have made pictures out of them, pictures that have been admired and praised in many countries.

And now a word as to papers. The introduction of highly glazed aristotype papers, so easily manipulated with combined bath, has induced many to make use of them in preference to those giving far more artistic effect. But if a thing is worth doing at all, surely it is worth doing well, and although platinotype or carbon prints involve a much larger expense of time, trouble and money, surely the result is worth it, and if these questions be of any serious consideration, why not make one in place of three of the other kind?

Some very good mat surface aristotype papers have now been put upon the market, and are much to be preferred to the glossy surface ones, which, however, have their use for certain purposes. The permanency of this class of printing papers is, however very doubtful. For larger sizes the rough papers lend an additional charm, but in this matter, as in many other instances, the photographer must exercise his own judgment, being guided by the picture itself. At the many exhibitions of photographs which I have attended here I have been much struck with the sad want of taste displayed in the mounting and framing of the pictures. Very much has already been written upon the subject, and I do not intend to go into the matter here, but if only amateurs would realize the importance of these matters I feel sure there would be an improvement.

This country can boast of some good photograph societies, well fitted up with all the latest conveniences, but in some cases these have become more like social clubs or mutual admiration societies than anything else. The amount of enthusiasm displayed in photographic matters is practically *nil*. The conversation one hears is generally of a nature entirely foreign to the subject, and at the various meetings the art side is

apparently ignored. Learned papers are read at the meetings upon "hydro-cum-oxalate—cum-everything-else—as a New Developer," "Why Does Metol Affect the Spinal Column?" or "Why Does a Silver Print Fade?" (a fact that might often be taken as a blessing than otherwise), but rarely if ever upon any subject likely to assist the amateur to make photographs which shall be pictures as well.

## English Notes.

BY GEORGE DAVISON.

INTRODUCTORY.—This is the first communication of what it is proposed shall be a continuous correspondence from the Old Country, addressed to photographers who are readers of the AMERICAN AMATEUR PHOTOGRAPHER.

My view of the situation is that I hold a brief to watch and report as well as the paragraph form will permit, the changes and developments in photography on "our side"—discoveries, inventions suggestions and notable events in the scientific and practical as well as in the artistic aspects of our subject. That which does not concern one reader may please another. In reading there is always selection, consciously or unconsciously made. It is my hope that these "notes" may prove interesting and serviceable, and that they may help to save some useful facts which would otherwise be buried from my American readers, and also serve to incite them to good artistic endeavor.

ILLUSTRATED PAPERS.—One of the signs of the times here is the great and rapid increase in the number of illustrated papers which rely, either entirely or partly, upon photographs for pictures to interest their readers. One fact may suffice—the proprietors of the *Illustrated London News*, not content with their world-wide notoriety in this publication, have added *The Sketch* and *The English Illustrated*, and have recently capped their enterprise with a fourth paper called *The Album*. In addition, a cheap paper, *Photos*, issued at a penny, devotes itself entirely to the reproduction of photographs. All the *Illustrated London News* group are, I believe, under one editor, and it is worthy of note that the photomechanical reproductions to appear in *The Album* were announced as "fine engravings!"

It is no use struggling against this sort of thing, even if the desire to stop the flood is felt. The demand exists. Photography, amateur and otherwise, and cheapened processes have made it possible, and it is all of a piece with the complexity and profusion of modern days, in which we have more of everything—more of the good, more of the bad, and more of the indifferent.

These illustrated papers, it is true, come under the second category, and are given over chiefly to poor portraits of actors and actresses. Both for photography's sake and the reputation of process, it is a pity they are so bad. What emotion they can be claimed to excite in order to explain their popularity is a puzzle. Apart from their imperfection as pictures and reproductions, they are, in the nature of the subject, deadly dull.

SAFE LIGHT.—Captain Abney gives in *Photography* a note of some interesting experiments as to what light may be safely used in changing or developing dry plates, both ordinary and orthochromatic. With an ordinary candle at night this light may be so placed outside a room with door wide open that the rays do not fall directly into the room or upon the ceiling, and the changing carried on in the room with complete safety. Even a paraffin lamp, giving a light of 8 to 10 caudles, causes no fog

"SUNSET ON THE ST. LAWRENCE." BY JAMES H. STEBBINS, JR.

(No. 82. Second Annual Members' Exhibition, Society of Amateur Photographers of N. Y.)



HARRY COUTANT

"THE COMING STORM."

under such circumstances. Several minutes' exposure would be required to do any appreciable harm. It is stated that "an exposure to the full moon for  $\frac{1}{4}$  second will not give an impression on the most sensitive film," and that "the rays of a candle may fall normally onto a film from a distance of 40 feet for 20 seconds without making any impression." Of course the color of reflecting surfaces used is of importance, but with moderately dark walls a candle may be placed under a table and the plates changed upon that table.

CONTROL IN DEVELOPMENT.—It will be remembered that a few years ago Messrs. Hurter and Driffeld drew considerable attention by their claim to have established as a fact that it was by exposure only and not at all by varying the constituents of the developer that the density ratios or gradation of a negative could be altered. Longer or shorter development, it was pointed out, altered the opacities or printing qualities of the plate but not the relative gradation; so that if a plate were not exactly correctly exposed in the first instance, nothing could be done by variation of the constituents of the developer to improve upon the inaccuracy of the record. This view was insisted upon by the authors in some of their papers with great persistence and sometimes with rather sweeping claims, such as that "art ceased to play any part the moment the cap was removed from the lens;" "beyond this point there is no further scope for individuality;" "the relationship between the different densities of a negative is irrevocably fixed by the exposure, and the photographer has no further control over it," and other similar contentions.

It is important now to notice that, in accordance with the general opinion, Messrs. Hurter & Driffeld practically admit the fallacy of some of their claims, and permit the addition of special speed numbers to be used with their system, as applied to particular developers. In other words, this admission of an alteration of speed by means of the development, means an admission of the alteration of the relative densities. Mr. Cadett, who uses Messrs. Hurter & Driffeld's system for marking his plates, says that the variations with the modern rapid plates, which can be obtained by altering the constituent qualities of the developer are simply enormous, and this independent of the influence of fog. Formerly Messrs. Hurter & Driffeld characterized all changes producible by energetic, and particularly ammonia developers, as mere tricks and only irregular disturbances quite beyond control; but now it is so far satisfactory to observe that, after all, the common sense view, begotten of practical work and experience, prevails over the theoretical contention.

DEVELOPERS AND SPEED OF PLATES.—Following upon the subject of the



preceding paragraph, it is interesting to quote Mr. Cadett's statement, that in comparing a ferrous-oxalate developer with a developer termed the "Velox," a certain make of plates gave a greater speed with the former, whereas with the Cadett plate the "Velox" developer gave 300 per cent. greater speed than the ferrous-oxalate.

Such being the case, it is difficult to believe that any system of speed numbers can have much value in practical work, wherein there are other conditions than those which hold in monochromatic light and laboratory plate testing.

**TIMING DEVELOPMENT.**—Also in connection with this subject there is the method of timing development proposed by Mr. Watkins—a method which may not have been put before my present readers. Starting with the conclusions arrived at by Messrs. Hurter & Driffield, Mr. Watkins has, by experiment, satisfied himself that, with few exceptions, the time of development necessary to get a correct printing negative bears a fixed relation to the time of appearance of the image. For practical use, Mr. Watkins has devised an instrument called the eikronometer. When the developer is poured on the plate, the hand of the instrument is set and the time of the appearance of the half tones (say grass in a landscape) is noted on the dial, when, by use of a slide rule, the time for completion of development is given.

Mr. Watkins claims that the time of appearance of the image, as a rule, makes all allowances for variations in strength, alkali, bromide and temperature of the developer, and that when once the multiplying factor or relation of time of appearance to a successfully completed negative has been arrived at by experiment for a certain developer, it remains constant for all makes of plates, and for accidental variations met with in practical work.

In this, as an accurate mechanical system, the necessity for judging which part of the picture shall be regarded for the first appearance is apparently a weakness. Different subjects would seem to require different tones to be looked to. The first appearance of the high-lights, for instance, might prove misleading by the accident of a very bright but small object happening to be in the picture or not. Another difficulty in the system is that the opportunity of altering the gradation by changing the developer, or adding fog, if required, is taken away. The fact of the matter seems to be that, in landscape and other practical work, the conditions of light, color, sensitive emulsion, development and printing, are too complex to be very satisfactorily crystallized or met under any mechanical formulæ or system.

**RULED SCREENS IN HALF-TONE WORK.**—It is one of the signs of the times that even in amateur societies process work begins to have an

interest for the members, and occasionally takes the place of the demonstrations of enlarging, toning, and other ordinary practices usually discussed at meetings. On several occasions recently, and particularly at one of the principal societies in London, the use and action of the ruled screen in half-tone negative making has been discussed. Some divergence of opinion seems to exist on the matter, but it appears to me that most of the phenomena can be explained by considering the intersection of the ruled lines as forming so many minute pinhole apertures, which throw images of the diaphragm opening, diffraction and interference being responsible for changes brought about by altering the position of the screen and for a weakening in parts of the dots.

**TONING PLATINUM PRINTS.**—In the search for means of varying the color obtainable with platinotype printing several devices have of late years been resorted to. The first of these was described a few years ago by Mr. Rowland Briant, and consisted of gold and silver deposit or intensification of the platinum image. Since then others have followed in the same lines with uranium depositing, and Mr. Dollond has elaborated a method of depositing gold in a glycerine application. The effect is to give a blue-black color with some strengthening, but the color is not altogether a pleasing one to my mind of its kind, and it seems hardly worth while giving formula. The best colors I have seen were those obtained with silver intensification by Mr. Briant and by Mr. Packham's method.

This latter is a pigment deposit method, and consists in the application of a warm solution of refined catechu to the print which it is desired to alter. A quarter of an ounce of catechu is boiled in 5 ounces of water for four or five minutes, and when cold, 1 ounce of alcohol is added as a preservative. Of this concentrated solution 30 to 40 drops are added to a pint of warm water, and the print being immersed in this, toning is completed in a fairly short time. If done cold, toning takes much longer. Prints which have lain by for some time are said to work easier. The method gives shades of brown up to a very warm color, and has a strengthening effect. Mr. Packham has protected the process by patent, but I think Dr. Ed. Liesegang has previously published references to the possibility of attaching pigment deposits upon platinotype images.

**BROMIDE FINISHING.**—Most of this work is an abomination, but for those who wish to fix pencil or crayon work on bromide prints a useful hint is given in *Photographic Scraps*. Put briefly the method is to direct a jet of steam from a kettle (by means of rubber tube and metal nipple) upon the surface of the treated print. This slightly softens the gelatine

surface and the powders are amalgated with it, and the result said to be admirable! Perhaps this wrinkle is not new and hails from America!

**ORTHO-CHROMATIC PLATES.**—Probably all my readers are aware of the enterprise of the French firm, Messrs. Lumiere Bros., in introducing three varieties of ortho-chromatic plates, one sensitized for yellow, one for red and green, and one for all three colors. It is a noticeable fact that Captain Abney and other experts do not hesitate to speak very highly of these plates. Recently Mr. I. W. Gifford has described at the Royal Photographic Society a series of his own experiments, and gives his preference to a commercial bromo-iodide plate sensitized with cyanine and phosphine. With these plates he used a screen stained with aurine and picric acid.

**ELECTRIC ARC LANTERNS.**—The electric arc as a light for the optical lantern is coming more and more into use here. The Camera Club has had one in use for a long time, following the example of the Society of Arts, and as new and improved lamps are devised and introduced the practice will undoubtedly extend. For weaker illumination (in place of oil lanterns) the incandescent gas system has also been adopted for lantern work, and a lantern has been introduced by Messrs. Phillip & Sons.

**ITEMS OF NEWS.**—The Camera Club, 1895, Conference and attendant gatherings will be held in the first week of April. Captain Abney will preside at the reading of papers, annual dinner, etc.

The Imperial Institute photographic exhibition, which is being organized on a scale never before attempted, will be held from the middle of May to the end of July.

The Annual Photographic Convention of the United Kingdom will be held in July, at Shrewsbury. Mr. Haddon will be President, in place of Mr. Richard Keene, recently deceased. I note that Mr. H. P. Robinson, whose native place is in the district, will be on hand to aid the festivities.

The Photographic Salon, 1895, will be held at the Dudley Gallery, from September 30th to November 2d.

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**Prize Print Pictures.**—Regarding this set of pictures, first exhibited during the month of March, by the Springfield (Mass.) Camera Club, the Secretary, Mr. Hinsdale Smith, Jr., writes: "We have greatly enjoyed the pictures and wish to thank you for your kindness in letting us use them." In April they will be exhibited by the Syracuse Camera Club.

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Beginners' Column.

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## CHAPTER XVIII.—WET COLLODION.

BY JOHN CLARKE.

IN the practice of modern photography wet collodion plays so small a part that it would hardly be necessary to include it in the "Beginner's Column," were it not that there is a pretty general impression amongst process workers that the most suitable negatives for process work can only be obtained by it.

By "process work" I mean or include all the various methods of mechanical printing—photogravure, collography, photo-lithography, photo-etching, half-tone engraving, etc., all of which are every day becoming more and more popular; for all of which negatives with perfectly transparent shadows and perfectly opaque high lights are essential, and some of which at least are easily within the ability of the average amateur. On that account I have thought it advisable to give the following instructions, by the careful following of which, after a little practice, the beginner will be able to produce satisfactory negatives.

The only addition to the apparatus already in use is a suitable plate holder or dark slide, as the modern double holder, where the plate rests on the rabbit or on brass wires, would not only soon be destroyed by the silver solution, but would lead to stains, markings, etc., making clean negatives impossible. The older cameras were provided with wet slides, and they will be made to order by any of the camera makers. They are usually single, opening at the back, and so arranged that the plate rests on the corners only, which may be either of glass or silver wire, and it is an advantage to have a *well* or groove running along the lower edge immediately below the plate, into which any draining may fall. A dipping bath, although not an absolute necessity, as plates may be sensitized in a flat tray, is also desirable, and, along with a suitable dipper, may be got from most stock dealers. They are narrow glass cells, and should be at least one inch broader and 2 inches deeper than the plate, when placed on the dipper upright. The dipper is sometimes of hard rubber, but that substance is not to be trusted; a piece of pure silver wire bent into the form of an A, with its basic points turned up and connected by a length of wire answers well; so does a strip of glass a couple of inches wide, one end of which has been softened by heat and turned up. But if neither of these are to be found, the beginner may make one for himself by taking a strip of stout glass a few inches longer than the depth of the bath and cementing a narrow strip of the same material across one of its ends, by marine glue or Canada balsam.

The first step in the practice of wet collodion is to select and prepare the glass. Some process workers use patent plate, and for large work it may be necessary, but for negatives up to, say 12 x 10 good flatted crown is perfectly satisfactory, better, indeed, than *plate*, as it has on it the original *skin* or fire surface, and so is more easily made chemically clean. To protect the fingers and cleaning cloths, the sharp, cutting edges of the plate should be removed, which may easily be done by drawing an ordinary scythe-stone several times along all eight edges with a from-heel-to-point movement of each draw.

**CLEANING THE PLATE.**—Probably nothing short of experience will enable the beginner to fully realize how important it is to thoroughly clean his plates, but a clean—*chemically* clean—plate is a fundamental principle in wet collodion. If new, they should be well washed, first in dilute acid—water, twenty ounces; acid sulphuric, one ounce—then in plain water and thoroughly dried; or for plates that have already been used or handled much, instead of the acid an ounce of potassium carbonate. For cleaning and polishing, various methods of holding the plate have been recommended, but nothing is simpler or better than the following cleaning board: Procure a perfectly flat, well-seasoned, smooth board, about 6 inches longer and at least 2 inches broader than the plates to be employed, and on this, beginning close to one end, glue strips of veneer, or anything a shade thinner than the glass, an inch wide, or any width that there is room for all round, so as to make a frame or recess in which the plate will lie without slipping while being polished. The longer length of the board permits the left hand to hold it steady while the right is employed in rubbing.

Various plate-cleaning solutions are in use; old collodion, whiting and ammonia, etc., but I have never found anything so convenient or better than the following, which was wont to be extensively sold as

DIAMOND POLISH.

Jeweler's Rouge.....	2 ounces.
Alcohol.....	6 "
Water.....	2 "

Shake the bottle and pour a little on the plate, lying in the recess of the cleaning board, and, with a pretty large tuft of cotton wool—*absorbent cotton*—go all over with a circular motion, keeping it up till the polish begins to dry. Then, take a cloth, of which there should be two, kept for first and second application, and of the material sold as *glass cloth* or old soft linen toweling; and with the same circular motion, remove every trace of the rouge. Turn the other side and treat it in the same way, finishing, or giving, the final polish with cloth No. 2, and turn again and give the final polish to the first side. Now remove the plate, touching it thenceforth only by the edges, and to test the result of

the operation, breathe on the surface and hold it in such a position that the light will be reflected direct to the eye. If the plate is clean the moisture will be deposited in an unbroken film, and unless it be so, the plate is unfit for use and the operation must be repeated. Of course, in ordinary practice, the worker *knows* when his plate is clean, and the breathing test is unnecessary, indeed, objectionable, as a trace of impurity may thereby be left on the surface.

The next step is to coat the plate with collodion. There was a time when every operator made his own collodion, and some even their pyroxylline, but there is no need for that now, as a better article can be bought than it would be possible, without much practice, to make.

Thoroughly reliable negative collodion can be found in most stock houses, and if it is got in separate solutions, which means the plain collodion in one bottle and the iodizer in another, they will keep indefinitely, it being advisable to only iodize as much at one time as is likely to be used within three or four weeks.

The actual coating of the plate successfully, is a question of practice, but is soon and easily acquired. If it is not larger than say, whole plate— $8\frac{1}{2} \times 6\frac{1}{2}$  inches—it may be taken by the near left corner, the longer way of the plate being from left to right, held between the bent first finger and thumb, and supported about 3 inches farther in by the second finger. Held thus in the left hand and brought as near as possible to the level, a pool of collodion sufficient to much more than cover the plate is poured on the center. Simultaneously with the pouring, the plate should be slightly and gradually tilted so as to cause the collodion to flow towards the thumb; from thence to the far left corner, then to the far right, and lastly, to the near right. But as soon as the flow has reached the far right corner and while making its way to the near the plate must be gradually tilted so that the superfluous collodion shall flow off there into the bottle held below to receive it. While this last part of the operation is going on and the plate at an angle not far from the vertical, a gentle rocking motion should be given to it to prevent the formation of lines. The coated plate is now kept—and preferably—in the vertical position, as less likely to be the recipient of dust, till *set*, which means till the ether and alcohol have sufficiently evaporated to leave the film just impressible by a touch of the finger, which may be from a few seconds to a minute or more, depending on temperature, etc., and then transferred to the *bath*, which may be made as follows:

NITRATE BATH.

Silver Nitrate .....	700 grains.
Water, Distilled .....	20 ounces.
Potassium Iodide .....	20 grains.
Acid, Nitric .....	q. s.

Dissolve the silver in four ounces of the water, the iodide in one ounce; mix the solution and shake for a few minutes; then add the remaining 15 ounces of water and filter, returning the first portions that pass through the paper till the filtrate is perfectly clear. Then test with litmus paper, and if necessary add acid, nitric, diluted with three or four parts of water, drop by drop, till there is a perceptible acid reaction, or, as clear glass is essential in the deepest shadows, it may be necessary to make the bath decidedly acid. Now pour the solution into the glass bath, which should stand in a frame or box at an angle of about 35°, and it is ready for use.

Returning now to the coated plate, as soon as it had set, if not larger than  $8\frac{1}{2} \times 6\frac{1}{2}$  it should be grasped by the outstretched thumb and fingers of the left hand by the edges, the collodion side next the hand; the dipper raised by the right hand till the lower end is within an inch or so of the top, and the plate laid on it, resting on the turned-up end, or on the strip cemented across the end, and the whole lowered by a steady, unhesitating motion to the bottom, as the least hesitation in the act of lowering the dipper would result in a horizontal line in the negative at the junction between the solution and air. The plate may be coated in the light, but put into the bath only in the dark room, which, however, in working wet collodion may be lighted with yellow or orange light bright enough to ruin an ordinary gelatino-bromide plate.

When the plate has been about a minute or less in the bath it should be gently moved up and down several times to facilitate the assimilation of the ethero-alcoholic and watery surfaces, and at the end of four or five minutes the dipper should be lifted high enough to let the whole of the plate be examined, the bath having been placed in such relation to the light that the surface is clearly seen, and as soon as the liquid runs smoothly from the surface, with no appearance of *greasy* lines, the plate is sensitized and ready for exposure. The dipper with the plate should be raised quite out of the solution, the extreme end of the former resting on the front of the bath, and the whole supported by leaning against the back. In this position the plate is allowed to drain for a minute or two, removed from the dipper and stood on edge on blotting paper, and the back wiped clean with the same material and placed in the dark slide or plate holder, ready for exposure. Just how long that should be depends on circumstances, and must always be a question of experience, but I may safely say that wet collodion under any particular conditions will require at least half as many minutes as the modern rapid plate will seconds.

The principle involved in the development of wet collodion is very different from that of the modern dry plate. The image—as was explained in a former chapter—of the latter is formed of the silver contained in the

film as silver bromide, which by exposure to light, had become amenable to reduction on the application of the developer, while the image of the former is formed from silver nitrate on the surface of the film. The role of the wet developer is to reduce the silver nitrate to metallic silver, which at the instant of reduction is attracted by such portions of the sensitive film as had been acted on by light, and just in proportion to the extent of that action. Gallic and pyrogallic acids were the reducers originally employed in wet collodion development, but for many years they have been displaced by iron protosulphate, or ferrous sulphate. The following answers the purpose admirably:

DEVELOPING SOLUTION.

Iron protosulphate .....	10 drachms.
Acid acetic, glacial .....	10 "
Alcohol .....	1 ounce.
Water .....	20 "

When the bath is quite new the alcohol may be omitted, its only use being to facilitate the flowing of the solution over the surface of the plate, a matter which, without it, becomes more and more difficult as the bath becomes charged with alcohol and ether.

Returning to the plate which has been exposed—and it may be well to say here that the plate holder, from the time that the plate has been put into it till it is taken out for development, should be kept in the vertical position—it must be removed from the plate holder and held by one corner, as in coating, taking care not to bring it to the level, but keeping the side that was at the bottom of the holder a little below the level of the opposite side. While in this position, from a developing glass or cup into which sufficient of the developer has been placed, pour by a steady, unhesitating sweep from the thumb holding the plate to the opposite near corner, as much as will freely flood the plate without running over, and simultaneously raise it to the level. This appears a difficult operation, but, with a little practice, is quite easy. The object of well flooding the plate is to prevent streaky markings, as the image flashes out almost immediately, and if any of the solution is allowed to run off the plate, it carries with it much of the free silver nitrate from which alone the image is formed. The solution on the plate should be kept in motion by a gentle rocking, and from time to time poured back into the cup, so as to see by transmitted light—looking through the negative—the progress of development. When the solution gets muddy, or when progress towards intensity seems to have stopped, which will be in a very few minutes, the solution should be thrown away, the plate washed by flowing over it a little water, and what is called re-development proceeded with. This is frequently done by adding a few drops of



a solution of silver nitrate to a fresh supply of the developer, and pouring it off and on till the desired density is acquired, but I have always preferred to re-develop by pyrogallic acid.

## RE-DEVELOPING SOLUTIONS.

## NO. 1.

Acid pyrogallic.....	30 grains.
Acid acetic glacial.....	30 minims.
Water.....	10 ounces.

## NO. 2.

Silver nitrate.....	1 drachm.
Acid citric.....	½ "
Water.....	1 ounce.

Previously to using this the plate must be washed, i. e., by a minute or so under the tap, or by slowly pouring over it at least two pints of water. To sufficient of No. 1 to cover the plate, add a few drops—from 10 to 20 for a whole plate—of No. 2, and pour on and keep it moving as before, examining from time to time and renewing the solution as often as it gets muddy, till the desired density is obtained.

After a slight wash, the

## FIXING SOLUTION.

Potassium cyanide.....	1 ounce.
Water.....	8 "

Should be poured on, the plate held in the hand as before. The plate will be fixed in a minute or so, when the solution may be returned to the bottle and used over and over again.

All that remains is to wash the plate—which, as the collodion film is much less absorbent than the gelatine, may be done perfectly by a few minutes under the tap or by pouring over it a few pints of water—and rearing it up to dry, or drying it by artificial heat.

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**The American Amateur Photographer Prize Slides.**—The prize slides began their tour among the clubs on March 1st, being shown first before the Camera Club at the Hotchkiss School, Lakeville, Conn., on March 2d. Thence they were sent to Akron, Ohio, and exhibited before the Akron Camera Club, on March 12th. On March 19th they were exhibited before the camera section of the Young Men's Christian Association of Lancaster, Pa. The Vice-President, Mr. G. Howard Wertz, writes to one of the editors as follows: "I wish to thank you personally on behalf of the 'Camera Section' for the treat we enjoyed last evening. This is our first experience in viewing slides made by fellow amateurs outside our own section, and from the expressions last night we have received much benefit." They were next shown on March 22d before the Elizabeth Camera Club, and on the 28th by the Albany Camera Club. Other subscribers and clubs desiring their use should send in their requests without delay.

## The Second Annual Members' Exhibition of Photographs.

HELD BY THE SOCIETY OF AMATEUR PHOTOGRAPHERS OF NEW YORK.

BY JOSEPH OBERMEYER.

THE Second Annual Members' Exhibition was opened for a private view Monday evening, March 18th, when a large company assembled to look at the good things which the committee, Messrs. J. H. Janeway, M.D., W. E. Johnson and F. M. Hale, had provided. It must be said at the outset that they were few, very few, both as to number and quality. Most of the prominent members who have made the reputation which the New York Society possesses as the most advanced in an artistic sense, in America, were absent, and what is shown in the Society's rooms is in no way representative of what the Society is capable of doing. When a club can boast of such members as R. Eickemeyer, Jr., Alfred Stieglitz, William B. Post, Emilie V. Clarkson and Edward Leaming, and these names are all absent from a club show, there is a strong likelihood that there is something wrong somewhere. It is possible, of course, that there are good and sufficient reasons not connected with the management of the exhibition, for the absence of every one of the above artists; but that would be a strange coincidence, indeed. It is much more likely that they withheld from exhibiting on account of the false policy which the Society will persist in following in its exhibitions. In order to attract the best talent, no matter whether the exhibition is restricted to the work of members or open to all, it will always be necessary that confidence should be created by putting the management into the hands of a committee whose names will be a guarantee to the intending exhibitors that the exhibition will be run on correct principles. Correct principles the writer understands to be such which will encourage those workers who go at photography in a serious spirit, be it in the making of pictures of artistic value or of scientific, and to distinctly discourage those who regard photography as a pastime merely, and produce quantities of views and snaps, showing no selection in the point of view or in lighting, and printed in identically the same fashion, without any regard for the individuality of the subject.

The officers of the Society have seen fit to disregard this first principle of success, and to appoint as committee three gentlemen than whom there are no more popular in the Society, but only one of whom, Dr. Janeway, has shown anything in the past to warrant his appointment in this capacity, and he only in the scientific branch of photography. The artistic side was therefore entirely unrepresented.

Had this committee at once proceeded to appoint an authoritative board of judges, and sent out the names of the same with the entry forms, all might still have been well. But this, too, was neglected, and the mistake made of leaving the announcement of the names, Messrs. E. Wood Perry, N. A., Fred. J. Harrison and Frank Leroy, until almost the last minute. Whether or not this board would have inspired sufficient confidence to induce the absent members to show, is an open question. The writer has not seen or heard anything of Messrs. Harrison or Leroy to

make him believe that it would, nor do the awards convince him to the contrary.

The judges had six silver medals at their disposal, one for each of the six classes, and a special gilt medal, offered by President R. A. B. Dayton for the best picture in the exhibition. Of these, five silver and the gilt were awarded, the sixth silver being withheld for the sufficient reason that there were no scientific exhibits.

As to the correctness of the award in Class A, landscapes and marines, there can be no question. Mr. Coutant's "The Coming Storm," No. 65, is a charming marine, full of vigor and atmosphere; a bit of sandy beach, a stretch of agitated water, the highlands of New Jersey in the misty distance, the whole topped by a sky full of heavy, threatening clouds—that is all; but all rendered with a correctness of values which makes it a little work of art. It is printed in dark green carbon, and is very neatly mounted and framed. Its mate, No. 66, "After the Storm," is not quite so successful, although still very pleasing. The clouds have partly broken and the sun lights up their lower surfaces brilliantly; but the lights are a little too hard, and the shadows too intense; the steamer in the foreground is disturbing. Dr. Jas. H. Stebbins, Jr., shows two marines, both excellent little studies printed on platinum, of which we like No. 82, "Sunset on the St. Lawrence," the better. Suitable mounting and framing would have aided these pictures considerably.

D. Berger Young sends fourteen frames of landscapes and marines which show considerable skill in selection and development, but why does Mr. Young give different planes with equal sharpness? He has just missed making several good pictures through this fault and too great an attention to details. In selection and lighting, No. 59, "Autumn Afternoon," is decidedly good, and will repay trying again. The tree in the middle mars it, however. Mr. Bracklow's "Point Lighthouse," No. 78, is well handled, but the ugliness of the buildings and their disposition on the plate robs it of artistic value. His "Surf at Marblehead" is hard, and does not compare with the one which netted him a gold medal two years ago.

E. W. Newcomb's "Landscape Study," is well selected, the foreground especially being very good, but the lighting is bad and the plate seems to have been undertimed. The clump of trees in the middle distance show hardly any detail and are one mass of black. The balance of the pictures shown in this class may possess much interest for the makers and their friends; artistic merit they have none.

In Class B, genre and figures, the medal goes to No. 33, "Swiss Hayfield," by Ernest Warrin, which was also awarded the President's medal. While possessing some merit, especially in the treatment of the distance, the picture hardly seems up to the medal class. The poses are constrained, especially the single figure on the left, which might well have been dispensed with; the steepness of the incline is unfortunate, and the sky is decidedly bad. The picture would gain much if it were cut down, so as to eliminate the sky. Why this print should have been awarded President Dayton's medal in preference to Mr. Coutant's, is one of those riddles which judges are wont to propound. Mr. Warrin's other two exhibits, Nos. 34 and 35, "Mending Nets," and "Gossip," are not good. The

former has entirely too much on the plate ; it is not necessary to have an entire view of a town as an accessory to the operation of mending nets. The figures in "Gossip" are posing and the lighting is flat. Mr. Chas. I. Berg gives a number of studies in his usual happy vein. No. 12, "Daphne," the study of a young woman, with graceful drapery hanging from one shoulder, leaving the other bare, is particularly effective. The treatment is broad, with an entire suppression of unnecessary detail, and the lighting very bold. In the writer's opinion, this was far more deserving of a medal than the successful print. Mr. Stern might take a hint from Mr. Berg. Most of his figure studies suffer from too great a wealth of detail. The exception to this, the portrait of a young man in a white suit, is the best of his lot ; it is not at all conventional, and is well lighted. Mr. Stern's flower studies are commendable for lighting and arrangement, but the choice of the accessories is to be condemned. In No. 116, the elaborateness of the design of the bowl and the rich drapery, although in itself very well arranged, detract from the flowers. All of this gentleman's pictures were framed close up, and made a very neat appearance. The fact that they were entered "Not for competition," should have been mentioned. Messrs. Davis & Sanford show some large carbon portraits in their usual style, and some large bromide reproductions from Remington's wash-drawings, which are remarkably well done. E. S. Bennet's work shows a very decided step backwards when compared with his work at the First Members' Exhibition. His figures are very conventional and the platinum prints are weak.

Class C—Architecture and Interiors. In this class, the judges have awarded a medal to Mr. A. Simpson for one of his well-known parlor interiors. The print has no merit whatsoever, whether artistically or technically. Mr. McKecknie shows some good bromides of plaster of Paris models in the Metropolitan Museum of Art.

In Class D, hand camera work, too, the judges have seen fit to reward some very commonplace work. Mr. McKecknie's frame, which gets the medal, is filled with snap shots taken at the seashore, apparently haphazard. The author has attempted to improve them somewhat by painting out some of the figures which he deemed disturbing, but it is very clumsily done. The only excuse the judges have, is that this exhibit is the least poor of a very bad lot.

Class E, transparencies and lantern slides in sets of six, has but few entries, but among them were two sets by Chas. Simpson, which were very fine indeed, and were properly awarded a medal. The majority were from negatives exposed in Norway. No. 84-5, "Evening Shadows on the Nile," is a gem.

The only other exhibitor whose work need be mentioned is Mr. C. Van Brunt, whose "Colored Flower Studies" are in every respect equal to those shown at the joint exhibition of the past year, for which he received an award.

Owing to the small number of frames, there was a good chance for tasteful hanging, of which the committee availed themselves successfully. There was no skying or hanging below the line, and the pictures were spaced properly, thus avoiding the crowded appearance which photographic exhibitions generally show.

## The Paris Salon, 1895.

PARIS, March 22, 1895.

DEAR AL: I have just returned from the Photo-Salon, and as I must go out will give you the general impression it made upon me. The aspect of the rooms was not pleasing, white and dark frames intermingling in such a way as to disturb the eye very much. Only two rooms are occupied by the photographs. Why, I don't know, as they are hung too high and much too close to each other.

At least half the things exhibited might easily have been refused, as being without interest to the general observer, and only hung probably to please the vanity of the exhibitor. (Thus your own "Old Mill," and the "Dutch Girl.")

If I were to get up an exhibition, I would try one made up entirely of enlargements, and would group the light and dark framings separately.

You have to get so close to those 4 x 5's, that having to look so attentively and generally having to bend, as in this exhibition, you are in bad humor before you know what you are going to see.

The question is: Is photography to be an art in which one intends to copy nature in her forms and color as truly as possible? If you merely intend to get every line which the camera copies, or to render the impression which the eye receives or the soul feels. You know I believe entirely in the latter, and therefore am of the opinion that the finest work I've ever seen is Craig Annan's exhibit. It is remarkably beautiful, and Craig Annan is a thorough artist. His portrait of an elderly lady *à la* Whistler, but beautifully defined at the same time is a veritable masterpiece, and no matter what progress photography will make, will always remain a masterpiece of artistic taste and fine feeling and good photography, for all I know. And yet that was hung on the third line, true, above his other works, which had the place of honor, but still much too high to be seen without difficulty. His "Une Charrure" is a poem. You know his way of framing and printing, which is always in such harmony with the sentiment of his work. His work stands alone, absolutely, and not approached by the others, by which I do not mean to say that the following men will not be able to rival his work some day: (Remember, I understand nothing about the technical qualities.) *Alexandre* (Belgium), "La Forge," very fine; *Bergheim* (Austria), in front of whose exhibit a fat man remarked: "Ca ne vaut pas la peine d'acheter un bon objectif pour faire ca!"; *Baker* (England), Shakespeare's Avon, very misty; *Demachy* (Paris) whose photos give the impression of red crayon drawings, which is perhaps a false appliance of photography, but his figures are well posed, which cannot be said of many others; *Henneberg* (Vienna) "Soir d'Hiver," which is very true in effect; *Le Bègue* (Paris) "Study of a Figure," which is charming and has a sort of Botticelli feeling. His other figures were very good also.

Nothing else attracted my attention. Now, upon looking through the catalogue, I see that several Americans exhibited, and although I remember their work, I confess that I do not think it can compare with those I've mentioned. I will not return to the exhibition, because I do not consider it worth the trouble—outside of Craig Annan's work, which I would like to own.

Between us, I did not care about your exhibit, which looked cheap, though not a bit worse than Eickemeyer's or Post's. Miss Clarkson's "Marine" looked well.

[NOTE BY ED.—The above letter was written to Mr. Stieglitz by a very intimate American artist friend of his, who is at present residing in Paris. It is published in full. The writer did not intend it for publication.]

# THE AMERICAN AMATEUR PHOTOGRAPHER.

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No. 4.

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ALFRED STIEGLITZ.

EDITORS

F. C. BEACH.

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## Editorial Comment.

*Our Illustrations.*—"Midsummer On The Housatonic," by C. R. Pancoast, of Philadelphia, our frontispiece for this month, is done in the well-known style of this worker. Mr. Pancoast always chooses simple subjects and tries to reproduce what he sees in nature. His pictures are full of atmospheric effect. It is needless to say that much of the fine quality of the original platinotype has been necessarily lost in the reproduction. "The Coming Storm," by Harry Coutant, is fully dealt with in the "Annual Members' Exhibition of the Society of Amateur Photographers." (Criticism on another page.) The print from which this picture was reproduced was not of equal merit with that shown in the exhibition.

*Women Members of Photographic Societies.*—So many women now enjoy the pleasures of amateur photography, and so many do excellent work, having in several cases shown a remarkably keen susceptibility to the illustration of art principles by photography, that their acquisition by any society may be counted on as a great gain. We are pleased to note that the old and well-known Photographic Society of Philadelphia has lately decided unanimously to enlarge its sphere by admitting women photographers to full and active membership. This step is sure to increase interest in the Society and popularize it. Out West a purely "Women's Camera Club" has been started in connection with a Young Women's Christian Association, which, we believe, is the first of the kind. It will doubtless do much good.

*The Acetylene Light.*—Much has been written and discussed lately regarding this new gas light, and more should be known than is about its adaptability to photographic uses and purposes.

The peculiar brilliancy and whiteness of the light, as against the ordinary gas or incandescent electric light, is one of its most distinguishing characteristics. Then, again, because of an improved and cheap process in which the electric arc furnace is used, the gas-producing material is readily manufactured. It is a combination of lime and coke dust, called calcium carbide,  $\text{CaC}_2$ , and has the appearance in color of a pepper and salt stone, is easily handled, and in the presence of water is quickly convertible into large volumes of gas.

It will not ignite or burn if put in fire, hence it is perfectly safe to carry about. We have seen a piece about twice as large as a walnut held in a wire pocket, lowered into a large bottle of water, having a cork at the mouth fitted with an ordinary 5-ft. gas burner, supply enough gas to the burner to keep a brilliant light going for five minutes.

The retail price per pound is said to be ten cents, and it will evolve five cubic feet of gas, an amount that would last sufficient for an ordinary evening's work. These features suggest useful possibilities of advantage to the photographer. A dark-room lamp, very compact and portable, could be made and utilized outside of the dark room. On account of its actinic power copying can be done to good advantage at night; then arranged in compact form it is susceptible of use in the magic lantern, giving a clean, white disc, much finer than oil and very bright. When escaping in the air the gas has a peculiar odor that is not pleasant, but if well bottled or held in tight reservoirs that is avoided.

We may expect to see in the near future portable gas lamps, in which the gas is made as needed or used, capable of being carried about as easily as the ordinary candle. The gas is especially rich in carbon and oxygen, the two vital elements in the production of a brilliant light.

*The Value of Naturalistic Prints.*—The difference between the effects produced by different printing papers from the same negative was brought to our attention the other day, and illustrates the need of choice and study by the photographer of paper which shall give to the picture the most artistic and naturalistic effect. It was mainly a picture of clouds showing an approaching storm. A print on aristo paper which we saw was flat and unattractive; the value of the clouds was scarcely noticeable, while the reddish color still further injured it. Another print on platinotype paper was very different; the value of the clouds was perfect in rendering, enhanced by the blue black color of the paper, which made their color value very nearly that of nature. It was a strik-

ing example of the need of judgment in the question of printing on the best paper most suitable to the subject.

*Exhibition Wall Space Charges.*—The experiment in the late New York Society Members' Exhibition of charging a minimum price of 25 cents per picture for wall space for pictures under certain sizes and more for those above the stated size, is the first of its kind ever tried by the Society, and has resulted in lessening considerably the amount of work contributed by any one exhibitor. It is the first exhibition where the wall space was greater than that of the frames sent in, and allowed space enough for the hanging of the exhibits to good advantage and easy inspection. The receipts from this source aid materially in reducing the net expenses of such exhibitions, and of a corresponding less drain on the treasury. In a large society where the room is limited, the plan no doubt is perfectly proper, since it checks the sending in of a superabundance of exhibits from any one party, and tends to make the exhibition more select. During the exhibition the attendance was very good. Many ladies were among the visitors.

*Standards for Lens Mounts, etc.*—We are glad to note that the Photographic Society, of Philadelphia, has taken up the subject of uniform standards for lens mounts and other screws and parts pertaining to the camera. It is time the American manufacturers adopted some uniform idea. The paper on the subject by Mr. Hand is worthy of consideration (see page 179). If the other societies co-operate, it is probable an improvement can, after a while, be effected.

## EQUATIONS OF THE CONJUGATE FOCI; THEIR DERIVATIVES AND THEIR USES.\*

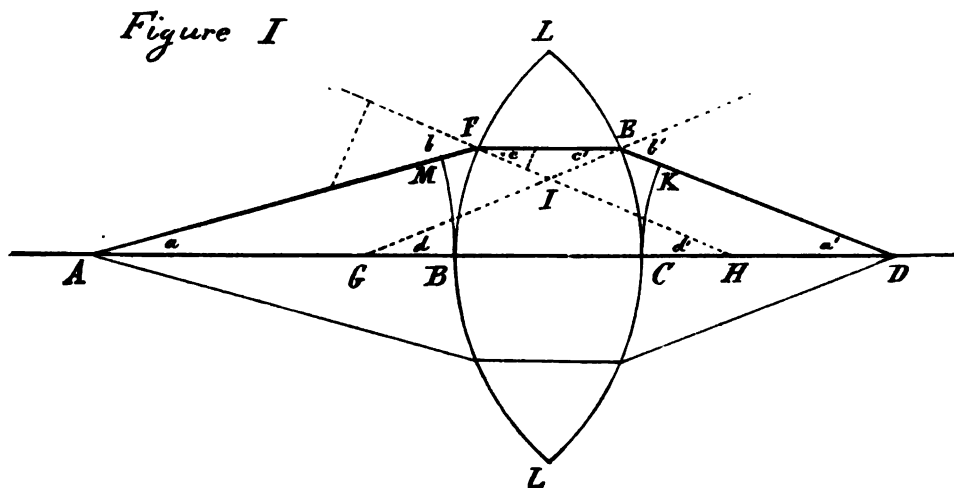
By WILLIAM M. MURRAY.

Some years ago J. A. C. Branfill, an English authority, deduced a series of useful equations from the general expression for the conjugate foci, which has been published in the *Almanac of the British Journal of Photography* ever since 1882, and in the *Photographic Times Almanac* (America) since 1887. Notwithstanding his lucid directions for their employment in practical photography these equations do not seem to have come into general use among amateurs, and it occurs to me that many are deterred from considering them as possible aids in their work by the apparently mysterious alternate values given for each focus, there being no fewer than four expressions for each conjugate. It must be confessed that photographers, as a rule, do not look kindly on mathematical calculations of any kind. To them all equations are algebra, and the suggestion that these formulæ may be used by any one possessing a knowledge of vulgar fractions is apt to be answered by a shrug of the

\* Read before the Society of Amateur Photographers of New York, November, 1894. Reported in the *Journal* of the Society, December, 1894.



shoulders and a thou-art-not-yet-fifty-years-old-and-dost-thou-teach-us? expression. Indeed, some of our would-be artistic brethren seem to believe that the study of scientific symbols may trammel their genius for making good pictures, forgetting that art *plus* science must ever be greater than art *minus* science. With a view to facilitate the understanding of these equations I here present the details of their derivation—which Mr. Branfill no doubt considered too simple a matter for explanation—and, for the benefit of my fellow members in The Society of Amateur Photographers especially, I have also prepared a demonstration of the general equation for a single bi-convex lens—following the admirable elucidation of Dr. C. E. Woodman, (*Photographic Times*, Volume XVII., part 1, and *Photographic Times Almanac*, 1887)—conforming the algebraic symbols to Branfill's equations. To these I have added an explanation of the subject of depth of focus, by the calculation of a formula for the distance beyond which all objects are in approximate sharpness. The whole of the following discussion of the equations of the conjugate foci pre-supposes a lens without appreciable thickness, and the formulæ are estimated for small direct pencils



from points of the object on the axis, deviated through the lens, to foci on the axis; no account whatever being taken of spherical aberration or curvature of field. While not absolutely correct from the standpoint of the manufacturing optician, they are sufficiently accurate to serve all the needs of the average amateur photographer—who generally uses lenses of the smaller sizes—for whom, indeed, the more complicated formulæ, expressed in terms of the radii of the curves, the index of refraction, and the thickness of the lens, would be so unwieldy as to be practically useless.

Let us first consider the general equation for conjugate foci, from which all the others are derived.

Fig. 1 represents a double-convex lens, *LL*, having radii *GC* and *BH*. *AF* is a ray of light from a point of an object on the axis, refracted through the lens from *F* to *E* and coming to a focus at *D*, also on the axis. *GE* and *FH* are two normals meeting the ray at the points of incidence and emergence, *F* and *E*. The angle *b*, made by the incident ray with the normal *FH* and *F*, is called the angle of incidence, and the angle *b'*, made by the emerging ray with the normal *GE* at *E*, is called the

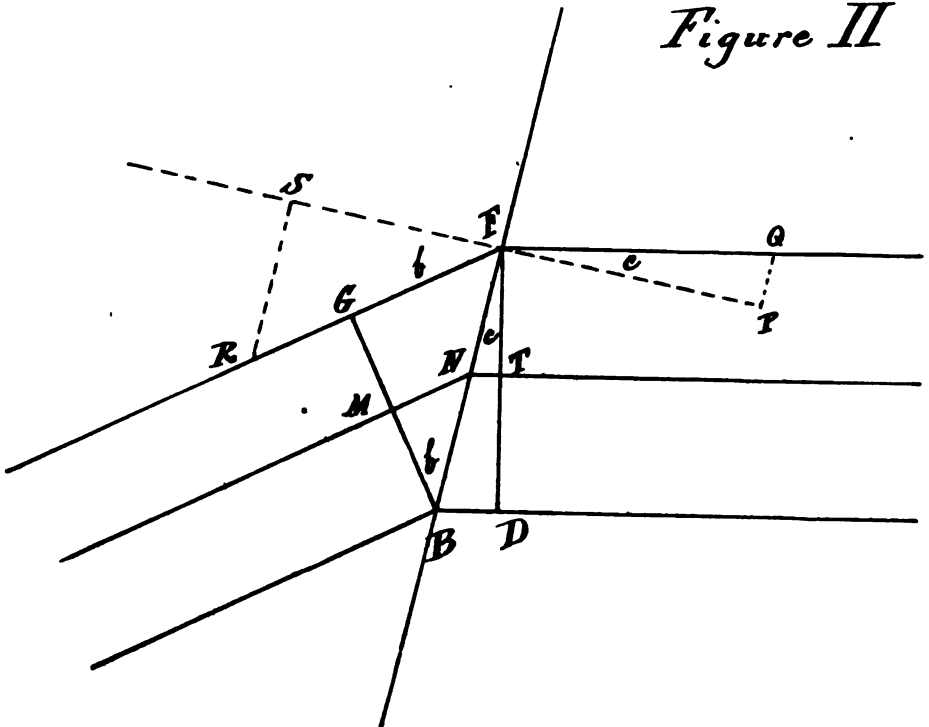
angle of emergence. The angles  $c$  and  $c'$ , made by the line of direction of the ray through the lens with the normals, are termed the angles of refraction. The figure is exaggerated in its proportions to show these angles clearly; in reality the line  $AF$  proceeds from a point so distant as to make the ray almost parallel to the axis, and the size of the lens is insignificant in comparison with the distance  $AB$ .

Now, because of the angle  $b$ , is the exterior angle of the triangle  $AFH$ , and the angle  $b'$  is the exterior angle of the triangle  $GED$ ,

$$\begin{aligned} b &= a + d', \text{ and } b' = d + a', \\ \text{and } b + b' &= a + a' + d + d' \quad (\text{No. 1}) \end{aligned}$$

Light is theoretically supposed to move in waves, the fronts of which advance at right angles to its direction. Let  $GB$ , Fig. II., represent a portion of the wave front of the ray  $AF$ , Fig. I., so small as to be practically a plane, meeting obliquely the surface of the lens along the line  $BF$ , Fig. II.—which, for the purpose of this discussion may also be regarded as a plane—and deviated through the lens along the lines  $FQ$  and  $BD$ . Calling the angle  $GBF$ , which the wave front makes with the surface of the lens and which is equal to the angle made by the direction of the ray with the normal, the angle of incidence  $b$ ; and the angle  $BFD$ , which the wave front makes with the lens surface after refraction, equal to the angle made by the deviation of the ray with the normal, the angle of refraction  $c$ , we have

*Figure II*



$$\sin b = \frac{GF}{BF}, \text{ and } \sin c = \frac{BD}{BF} \quad \text{Dividing the first by the second,} \quad \frac{\sin b}{\sin c} = \frac{GF}{BD}$$

But it is evident that while the point  $G$ , of the wave front, is advancing from  $G$  to  $F$  that the point  $B$  advances in the new medium to  $D$  according to the ratio of the velocity of light in the two mediums. Designating the respective velocities of light in the first and second mediums by  $V$  and  $V'$ , we may write  $\frac{\sin b}{\sin c} = \frac{GF}{BD} = \frac{V}{V'}$

or the sign of the angle of incidence is to the sign of the angle of refraction as the velocity of the incident light is to the velocity of the refracted light. This ratio of the velocities of light in passing from one medium to another is termed by opticians the *Index of Refraction*. Designating this index (or  $\frac{V}{V'}$ ) by  $m$ , we have

$$\frac{\sin b}{\sin c} = m. \quad \text{Similarly we may prove, from Fig. 1, that} \quad \frac{\sin b'}{\sin c'} = m.$$

Substituting the angles for their sines, as being virtually proportional,  $b = m.c$  and  $b' = m.c'$  adding,  $b + b' = m(c + c')$  (No. 2)

But the triangles  $FIE$  and  $GIH$ , Fig. 1, having a common angle at  $I$ , therefore,  $c + c' = d + d'$ , substituting in Equa. (No. 2)  $b + b' = m(d + d')$  (No. 3)

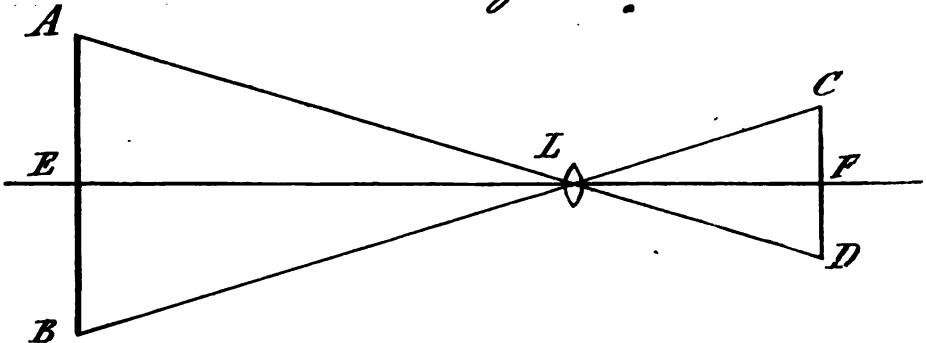
Combining No. 3 and No. 1,  $m(d + d') - d - d' = a + a'$  or  $m - 1(d + d') = a + a'$  (No. 4)

Designate the radius  $GC$  by  $R$ , the radius  $HB$  by  $R'$ , the conjugate focus  $AB$  by  $F$ , and the conjugate  $CD$  by  $f$ . Then with  $AB$  as a radius and  $A$  as a centre, describe the arc  $MB$ . With  $CD$  as a radius and  $D$  as a centre, describe the arc  $CK$ .

$$\text{Then } a = \frac{MB}{F} \quad a' = \frac{CK}{f} \quad d = \frac{EC}{R} \quad d' = \frac{FB}{R'} \quad \text{Substituting these values in Equa. No. 4, } m - 1 \left( \frac{EC}{R} + \frac{FB}{R'} \right) = \frac{MB}{F} + \frac{CK}{f} \quad (\text{No. 5})$$

But, as we have said before, the the lens is so comparatively small that we may regard the arcs  $MB$  and  $FB$ ,  $CK$  and  $EC$ , as virtually coinciding in straight lines, as equal to each other, and, from the construction of Equa. No. 5, as equal to unity.

Figure III



Therefore No. 5 becomes  $m - 1 \left( \frac{1}{R} + \frac{1}{R'} \right) = \frac{1}{F} + \frac{1}{f}$  (No. 6)

This is the general formula for bi-convex lenses, expressed in terms of the conjugate foci, the radii of the curves and the index of refraction. If the point *A* (Fig. 1) is at an infinite distance from the lens, then  $\frac{1}{F}$  becomes  $\frac{1}{\infty} = 0$ , and *f* becomes the focus for parallel rays or the principal focus. Designating the principal focus by *p*, Equa. No. 6 becomes

$$m - 1 \left( \frac{1}{R} + \frac{1}{R'} \right) = \frac{1}{p} \quad (\text{No. 7}) \quad \begin{array}{c} \text{Comparing} \\ \text{Equa. No. 6 and} \\ \text{No. 7,} \end{array} \quad \frac{1}{F} + \frac{1}{f} = \frac{1}{p} \quad (\text{No. 8})$$

This is the well-known general formula for conjugate foci, embodying the familiar law that *the sum of the reciprocals of the two conjugate foci is equal to the reciprocal of the principal focus.*

The refractive index of air to glass is known by experiment to be in the ratio of 3 to 2, or  $m = \frac{3}{2}$ , substituting in Equa. No. 7 and reducing the first member to a

common denominator,  $\frac{R + R'}{2 RR'} = \frac{1}{p}$  whence,  $p = \frac{2 RR'}{R + R'}$  (No. 9)

being the general equation for focus of a glass bi-convex lens. If the radii are equal,  $R' = R$ , and  $p = \frac{2 R^2}{2 R} = R$ . (No. 10) Therefore *the principal focus of a bi-convex lens of equal curves is equal to its radius.*

(To be continued.)

**The Universal Diffusion of Photographic Knowledge.**—Current literature rejoices in the universal diffusion of photographic knowledge. It is the boast of the newspapers that technical articles on photographic subjects are generally appreciated, and that they are not out of place even in the daily newspapers. I met a pleasing illustration of this the other day in one of the largest photographic stock houses in the country. The manner of the incident was as follows: The manager wished a photograph of some new apparatus, with a group of employees arranged about it to illustrate its use. Several ladies from the counting-room, on the same floor, as well as half a dozen salesmen were impressed for the purpose and an expert from the top floor came down with a large camera to arrange and photograph the group. About half the party were utilized in the picture, the remainder standing about watching the proceedings. When the camera had been adjusted, the focus obtained, the photographer took his head from under the focussing cloth and reached for the plate holder. He found it open in the hands of two of the young ladies, who were examining the plates with great interest and asking questions of one of the clerks in regard to their nature. Then there was a silence most profound. The photographer was simply dumb with amazement. As he went up to the dark room to fill his holder again his face was a study, but he did not open his mouth. I can only quote, "If I had not seen it, I would not have believed it."

ROMAN.

## Society News.

**Society of Amateur Photographers of New York.**—*Regular Meeting Tuesday Evening, March 12th.* President R. A. B. Dayton in the chair. The Recording Secretary, Mr. Alfred Schoen, read the minutes of the last meeting, which were approved.

The President called attention to the exhibition of prints on the wall, the work of Mr. Horace L. Bundy, of Hartford, Conn., a professional photographer. They were mostly well executed portraits taken in an ordinary room with a side window, and were printed in a variety of tones on platinum and silver paper. The work reflected credit on Mr. Bundy's abilities. The opening members' exhibition was announced to have been postponed from March 13th to March 18th. Mr. Wertheim, representing the Ilo Paper Co., was then introduced, and gave a demonstration on the working of the paper, prefacing it with the statement that he was prepared to answer all questions concerning the paper. The new points in working the paper were that it should have a preliminary washing in water not below 55° F. in temperature, for three or four minutes prior to being immersed in the combined toning and fixing bath, and it was of the greatest importance that the bath should not vary in temperature below 55° F. or exceed 60°. To be exact and know what one is about, he advised the use of a thermometer to test the solution before beginning. If these points are carefully observed the prints will tone in about five minutes, and be permanent and unchangeable.

In mixing the bath hot water should be used. In less than twenty-four hours it will settle clear and cool. There were several questions asked, not a few questioners being skeptical as regards the permanence of the prints, the latter having changed color after a while. After the toning the prints should be washed for one hour in changing water.

It was generally conceded to be one of the easiest and simplest ways of working this kind of paper, and for quick proofs might be useful, but the experience of several was that the prints would change in two or three years. Mr. Wertheim, however, guaranteed the prints to be permanent if the directions were followed.

Dr. Janeway, Chairman of Committee on Science and Art, being absent, no report of the Committee was made.

Mr. F. C. Beach showed two or three novelties. The first was a film holder, or a holder for bromide paper, to hold it out flat when in the developing tray, invented and sent to him by Mr. August Chr. Kitz, of Frankfurt-on-the-Main, Germany. It was for 4 x 5 films, and consisted essentially of two light clips with apertures in their center into which the end of a wire A shaped spring fits. The clip is first secured to each end of the film, over-lapping it about one-eighth of an inch; then the two ends of the spring are inserted in the respective apertures, bringing to bear a light tension on the film, keeping it taut and smooth. Taking hold of the upper apex of the spring the whole is readily handled and the film easily immersed in the developing tray, washing tray or fixing bath without the need of the fingers touching the solutions. After a film negative is completed, the spring can be removed and the clips slide over the ends of a D shaped wire, the ends being the right distance apart to hold a 4 x 5 film taut, and hung up to dry. This prevents any possibility of the curling of the film when drying. Two films with the backs together can be clamped in the same clips and worked perfectly. The accompanying illustrations show the device more clearly. (See Figs. 1 and 2.)

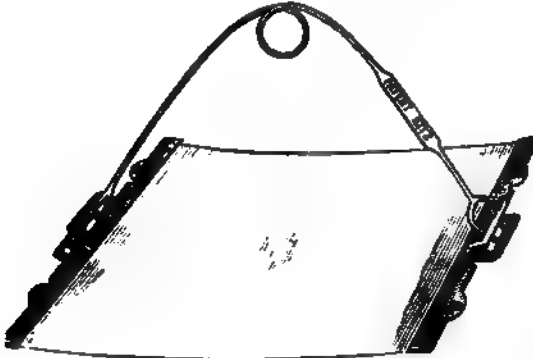


FIG. 1. KITZ FILM HOLDER.

by Messrs. E. & H. T. Anthony & Co. It is of foreign manufacture, but of remarkably simple construction. The shutter has a positive movement, and is removable with the front end of the camera. The lens is single, having a fixed diaphragm. The back end of the box is removable, and the plates, first inserted in metal carriers, are put in an upper compartment, a projection on one side of each carrier resting against a laterally moving pin just under the top part of the camera. This pin is connected by a wire to a knob on the outside of the box. In this compartment the plates are in a vertical position, and are pushed forward by a spring pressing against the back carrier as fast as used. Below the upper compartment, is a lower one, intended to hold the plates in a horizontal position. After an exposure is made, the knob on the side is pulled, the camera being tilted slightly, the back higher than the front, which releases the exposed plate at the top and allows it to swing over in a

Mr. Kitz also has modifications by means of which several films may be held straight on a wheel and rotated around into a developing tank and fixing tank at one time. (See Figs. 3 and 4.) But this simple holder is quite unique in its construction, easy to work, and was very favorably regarded by a number of the members present.

Mr. Beach next exhibited the Zoka \$5 magazine hand camera, sent for exhibition

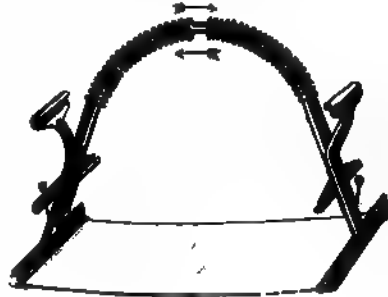


FIG. 2.

FIG. 3.

FIG. 4

half circle, falling film side down to the bottom of the box; then the camera is tilted vertically, the front upward, which causes the exposed plate to slide into the lower compartment under that of the unused plates. The metal edge of the carrier overlapping the plate, prevents the films from getting scratched. The back of the camera is removable for purposes of loading and removing plates. There are also the usual finders.

He next exhibited the \$5 Empire 4 x 5 hand camera, sent by the Scovill & Adams Company, which was characteristic of the good work supplied by that concern. It has a nicely varnished wood case, a very good lens, a simple shutter, easily worked and attached to a removable sliding front, so that the lens can be easily got at and cleaned. In the back is the usual ground glass and side door for inserting the slide. A round hole at the back permits the image on the ground glass to be seen for focussing. On the side is a scale for quick focussing, and the movement is quite easy and simple. The usual finders are also in proper position. The accompanying illustration shows the general appearance of the camera.

Mr. Chas. Wager Hull exhibited a model of the Sunart Magazine Film Camera, which possesses some novel features. The lens is good, and the shutter is similar to the Bausch & Lomb leaf shutter. But the contrivance for operating the cut films is quite ingenious and positive in its movement. The films are put up in packages, each film being held against a thin cardboard backing by two thin metal strips or clamps on each end, which are removable after exposure by slipping off with the fingers. They are easily loaded into the magazine. A film is released after exposure by the half turn of a disk on the outside of the back of the magazine, and falls from the vertical to a horizontal position in the interior of the camera. The revolution of the disk also operates a number wheel, which denotes or tells the number of films used. The focussing is done by turning a vertical disk projecting

slightly above the surface of the top of the camera, on the principle of a worm gear screw. All parts of the camera are readily accessible.

Mr. Krouse exhibited an expensive model of a camera shutter, which he had invented, and which contained several new features for shutters. It is placed in the camera behind the lens, and is so planned that many different forms of exposures may be made. For example, if it is desired to give a quick exposure to the sky and a time exposure to the foreground of one or two seconds, it is done by adjusting a special time mechanism to one part of the shutter, and the instantaneous device to the other.

If it is desired, say, to give a red house on one side of the view greater exposure than all the rest of the picture, a quarter section of the shutter may, by a special device, be detained from closing, say, for two seconds or so, while all the other sections move rapidly. Several modifications are possible. Should it be de-

THE SUNART CAMERA.

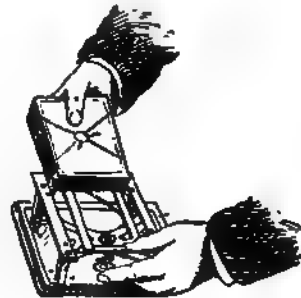


FIG. 1. THE SUNART CAMERA.  
(The Film Holder.)

FIG. 2. THE SUNART CAMERA.

sired to take a landscape and wait for some opportune time when there is a brilliant fleecy cloud sunset, so as to enhance the beauty of the picture, the lower half can be exposed in the morning, taking in the landscape, and the upper half, taking in the clouds, in the afternoon, keeping the camera in the same position all the time. At first sight, the shutter appeared somewhat complex, but once understood it is easily manipulated, and has the merit of being quickly adjusted to take almost any kind of desired photograph. Mr. Krouse had expended quite a sum in getting up a working model, and had been at work perfecting its details for some time.

After the exhibition of this shutter the meeting adjourned.

**SECOND ANNUAL MEMBERS' EXHIBITION.**—*Monday Evening, March 18th.*—The second annual exhibition of members' work opened on Monday evening by a private view, to which members and friends were invited. There were quite a number of visitors present. The latter part of the evening, Mr. Cornelius Van Brunt exhibited on the screen a set of slides, beautifully colored, of cultivated green-house flowers of



several varieties. Mr. Charles Simpson exhibited slides; his views in Norway taking the silver medal for slides and transparencies.

The committee had hung the exhibits tastefully, and while there were not many of great interest, there were some pictures of merit, showing efforts in the right direction. Mr. Johnson, for the committee, announced that there would be some kind of a short lantern slide exhibition every evening, and everybody was invited. The exhibition will continue, open evenings only, until March 27th. The committee consists of John H. Janeway, M. D., W. E. Johnson, F. M. Hall. The Judges were E. Wood Perry, Frederick J. Harrison and Charles Leroy. There were 31 exhibitors, and about 120 frames. An illustrated catalogue having a loose supplementary leaf inserted was sold for 10 cents, and had a well executed photographure illustration of a view among the trees on Goat Island.

*Ex Friday Evening, March 20th.*—The set of slides shown were by the Frankford and Minneapolis Camera Clubs, Mr. Wm. M. Murray presiding at the screen, President R. A. B. Dayton and Mr. F. M. Hale operating the lantern.

In the Frankford set there were several slides technically good but not specially interesting; the portrait of a darkey boy called "A Young Coon," by Wm. S. Sutch, was very good, and a picture of a tame owl, by Mr. John M. Justice, was novel. Dr. Benj. Sharp had several good foreign views in Hawaii and Bavaria, also one of a group of icebergs in Disko Bay, Greenland, that were interesting. Mr. R. P. Sommers' view of a Gondolier in front of the Liberal Arts Building was technically fine. The Minneapolis set opened with an excellent picture of Minnehaha Falls frozen in winter, by Prof. W. R. Appleby. The subdued effect of light on the ice gave a most pleasing impression. Miss M. A. Palmer's single slide, entitled "Mending," was a simple and happy representation of a genre portrait study. Miss Eva McIntyre's view of a "Log Jam," eight miles long, gave an excellent idea of its immensity.

Mr. C. J. Hibbard's views covered different subjects; his pictures of a dog called "Johnny Smoker" and another, "His Double," were very good in their way. "Summer Tobbogganing," "Birches" and "A Good Sailing Breeze," by Mr. H. E. Murdock, were interesting in variety of treatment and show him to be a clever worker. Mr. A. L. Eidemiller, the former Secretary of the club, contributed good landscape studies, including a pretty view on Minnehaha Creek. His excellent flash-light in "Burt Harward's Art School," showing the students studying from life, (a nude figure on a platform) was remarkably realistic and effective. W. B. Augir had some amusing animal and figure studies. His "Day Dreams" was a fine slide technically, of a wooded landscape, but the title did not harmonize. The lady leaning on the fence was too much on one side of the picture. "Seining for Minnows" was a beautifully clear slide.

Mr. A. S. Williams, the Treasurer of the club, contributed the largest number of any member and had quite a variety. His "Frost and Ice Under Minnehaha Falls" was particularly fine, but his set of figures illustrating camp life and its frolics at Camp Meta, on Lake Harriett, was the best set of its kind that has been shown. Among these should be mentioned "Pleasing Reflections," "The Parting Gives Me Pain," "Cracking the Whip," "Tug of War," and "Liberty Enlightening the World." All of the participants appeared to know how to pose well and entered readily into the ideas intended to be illustrated, while Mr. Williams was expert with his camera in catching them just at the right moment. The improvement in technique of this club on previous years was quite marked.

Following these slides were several by members of the New York Society. New York scenes, by Mr. C. C. Roumage; hand camera Coney Island bathing shots, by Mr. McKecknie; World's Fair debris, by W. S. Briggs; figure studies, by Mr. Davis, and several beautiful marine and landscape views, by Mr. Wm. B. Post.

**NOMINATIONS FOR 1895.**—The Nominating Committee appointed by the Board of Directors, consisting of Charles Simpson, W. H. Hapgood, H. A. Smith and F. C. Beach, reported on April 1st the following nominations: For President, C. C. Roumage; Vice-President, James H. Stebbins, Jr.; Treasurer, W. E. Johnson; Recording Secretary, Robert L. Bracklow; Corresponding Secretary, Thomas J. Burton. For Directors: John T. Nagle, M. D.; Louis T. Brush, M. D.; Albert Stetson, C. W. Canfield, Geo. F. Bassett, E. T. Birdsall, Harry Coutant.

The election occurs at the annual meeting on April 9th.

**Photographic Society of Philadelphia.**—The regular stated meeting of the Society was held on February 13th, Vice-President Mr. Charles R. Pancoast in the chair. The report of the Board of Directors was read. The recent entertainment had been helpful in wiping out most of the debt of the Society. Ten applications for membership had been proposed, which included the names of four ladies, the first to be admitted to the Society.

Mr. John C. Browne, referring to this fact, said, that inasmuch as the Society had been a "men's society" ever since its organization, in 1862, an expression of opinion on the subject from the members at large would be of value for the guidance of the directors.

Mr. S. Ashton Hand said that he thought that the Society had been a bachelor thirty-three years too long, in which sentiment Mr. Henry Troth, Mr. Evan T. Ellis, Mr. Charles R. Pancoast, and others acquiesced.

Mr. William H. Rau called attention to the fact that some of the strongest of the photographic societies in this country had women members and others were moving in that direction.

Mr. S. Ashton Hand read a paper entitled "A Plea for Standards in Photographic Apparatus."

"From the building of the Tower of Babel came the confusion of tongues, and all things inanimate have been in more or less confusion from that time to the present day. But as civilization progresses, order is gradually being brought out of chaos.

"Until within the past thirty years it was the practice of machine makers to use odd sizes and pitches of screws in their products. A given screw was designed especially to differ from any other screw that had been produced by any other man, the idea being that repairs should bring grist to the maker's mill, and not to any one else's mill.

"Fortunately, this theory has long since been exploded, and a standard system has been adopted by all progressive manufacturers, not only for screws, but for all component parts of machines or implements. So thorough is this system of standards, that it is possible to go in a modern sewing-machine factory and take apart a thousand machines, throwing the various parts into a promiscuous pile, and then to put together a thousand perfect machines from parts taken at random from that pile.

"Photographic apparatus generally is entirely devoid of any such system.

"The writer has three Beck lenses which will all screw into one flange. If the flange is mounted on the lens board of the camera so that one of these lenses can be put in place with the diaphragm slot in the proper position, the diaphragm slots of

the other two lenses will be anywhere but in the right positions when screwed into this same flange. This necessitates the use of three separate lens boards and flanges.

"All of these lenses were sent to Bausch & Lomb to be fitted with shutters, the original lens tubes, but only one flange being sent with them. No one of these shutters attached to these lenses will stand in an upright position, nor in the same relative position one to the other, when screwed into the flange on the before-mentioned lens board.

"If these three lenses are to be used both with and without shutters, and required to stand in their proper positions, it will necessitate the use of six flanges and six lens boards where one of each should suffice.

"An English firm has undertaken to correct this difficulty by furnishing a standard set of flanges and adapters. This is all very well for the lenses now in existence, but why should not the manufacturers adopt a standard for the lenses and flanges that are to come, so that a lens of a given focus, no matter by whom made nor where purchased, will screw into any other flange made for any other lens of the same focus and have the diaphragm slot in the proper position?

"Tripod screws and their stationary nuts are not interchangeable. The screws on the average tripod are too long and too small in diameter to hold a 4 x 5 Kodak and are too short by one quarter of an inch to hold the regular Eastman camera. They are also too large in diameter to go in the stationary nut on the Blair English compact camera.

"Plate holders by one maker should fit the cameras of same size by any other maker. So should lens boards.

"Dark slides of one size plate holder should fit any plate holder of the same size in the market.

"Sensitometer numbers of dry plates mean absolutely nothing. They should be systematized so that the slowest plate should be designated by unity and the faster plates by multiples thereof, in such uniform manner that a plate of say 25 sensitometer, will be 25 times as fast as a plate of 1 sensitometer, and all plates of same sensitometer numbers should have the same speed. Then can we be more sure of time of exposure without taking into account the few odd thousandths of seconds now necessary for correct exposure.

"It has been shown by reports at former meetings of this Society that the plate makers collectively will not agree to do anything, except to compel us to buy what they choose to make.

"Taking all things into account, the writer is strongly of the opinion that manufacturers of photographic apparatus in general and dry plate makers in particular, are the result of a sort of Mephistophelian cross with a Colorado mule.

"But a day of reckoning must come, and when it does come manufacturers of photographic apparatus will awaken to the fact that they will have to give the public what the public wants.

"Cognizance of the needs of the general public and a readiness to supply those needs is the power behind the throne that has built up the enormous trade of our largest establishments.

"The need for all these reforms does not constitute my special tale of woe nor your special tale of woe, but it does constitute the tale of woe of photographers generally all over the land.

"How the multitude of sizes and shapes of plates originated is beyond the compre-

hension of man. Each original maker must have made his own measure out of a piece of hoop iron and used a tenpenny nail to graduate it with.

"The writer specially pleads for a standard size of plates from which all other sizes of plates can be derived by simple multiplication or division, and which shall be of such proportion that when halved and quartered the progeny thereof shall still retain the same proportions as the parent plate. That is to say, that if all the different sizes of plates shall have their left-hand and lower edges brought into coincidence, and a diagonal line be drawn from the lower left-hand corner extending through the right-hand upper corner of any one of the plates, it shall then pass through the right-hand upper corner of all the plates. Such a diagonal line will be approximately  $35\frac{1}{4}^\circ$  from the horizontal, and the proportions of the plate will be as 1 is to 1.4142+.

"The size of plates now on the market that comes nearest to fulfilling these conditions is 5 x 7.

"A standard unit size of plate can easily be deduced either by simple calculation from the above formula, or graphically by the diagonal line of  $35\frac{1}{4}^\circ$  before referred to.

"The advantages of plates of such proportions are obvious. When plates of a certain size are not in stock they can be cut from any of the larger sizes without waste. Storage room for plates and negatives can be more easily and economically devised. Two negatives of one size can be put into the next larger sized printing frame at once, and fewer sizes of sensitized paper need be kept on hand.

"That most if not all the photographic apparatus of the near future will be made to agree with some rational standard is not doubted by the writer, and it is earnestly hoped that this Society will take such action in the matter as will leave no doubt that to them will belong the credit of having originated the system of standards that shall ultimately be adopted."

Mr. Pancoast, Mr. Stirling and Mr. George B. Wood all took part in a discussion approving Mr. Hand's suggestion.

Mr. John Carbutt, speaking as a dry plate manufacturer, said that he would welcome any system which would simplify the matter of sizes. The present series of sizes were those which have been in use from the first, and some of them certainly have no reason for their being. One size which is still kept on the makers' lists, though rarely called for, and which he would be glad to see dispensed with, is the so-called "half-size"— $4\frac{1}{2} \times 5\frac{1}{2}$ —which isn't really the "half" of anything in use. The "quarter size"— $4\frac{1}{4} \times 3\frac{1}{4}$ —was another size which could easily be dispensed with,  $4 \times 5$  being as small as need be used, and being besides the half of a  $5 \times 8$  and the quarter of an  $8 \times 10$  plate. Mr. Carbutt spoke also of the inconvenience suffered by American and English photographers when compelled to use the European sizes, which are measured by the metric system. The  $5 \times 7$  inch came very near the  $13 \times 18$  c. m., so near, in fact, that those two sizes were practically interchangeable. He also agreed with Mr. Hand in recognizing the importance of a uniform system of screws, and hoped something might be done to accomplish so desirable a result.

Mr. George Vaux, Jr., asked how the uniformity of microscope objective screw threads had been brought about.

Mr. John C. Browne said that it had been accomplished by persistent pegging at the problem. A change of that sort meant some inconvenience at first, of course, but the advantages more than made up for the trouble involved.

Mr. Walter Stokes moved that a circular letter embodying Mr. Hand's suggestions be prepared and sent out, in the name of the Society, to the various manufacturers.

After some discussion as to the best way of getting at the result aimed at, in which Messrs. Frank H. Rosengarten, S. Hudson Chapman, William A. Bullock, and Edmund Stirling took part, Mr. Stokes accepted as a substitute a motion for the appointment of a committee of five to take the general subject of standards into consideration, and to report to the Society a plan by which the subject may be brought to the attention of photographers and the makers of photographic apparatus.

Mr. Stirling showed samples of a new printing paper, and Mr. John G. Bullock exhibited on the screen a beautiful collection of lantern slides from his own negatives. Mr. Frederic E. Ives showed the construction of his stereo-photochromoscope. The meeting then adjourned.

A LARGE AUDIENCE on Visitors' Night, Wednesday, March 6th, was treated to a most interesting lecture on "The Canadian Pacific Railroad—A Western Highway," and a series of pictures, the work of Messrs. George Vaux, Jr., and William S. Vaux, Jr., the former acting as lecturer.

*Stated Meeting, March 13, 1895.*—President, Mr. Joseph H. Burroughs, in the chair. The board of directors submitted their monthly report.

Nominations were made for officers and directors, to be elected at the Annual Meeting in April, covering substantially the same officers and directors now in office.

Dr. W. D. Robinson introduced the subject of a change of quarters, and expressed the opinion that the present rooms were unsuitable.

Mr. Frank H. Rosengarten moved that the Board of Directors be requested to take into consideration the subject of finding new and more convenient quarters for the Society. He spoke of several new buildings which were in course of erection in which he thought suitable rooms might be had, and said that the noise and the vibration of the building made the present quarters most undesirable.

Dr. Benjamin Sharp seconded the motion, and the subject was very fully discussed, after which the motion of Mr. Rosengarten was adopted.

Dr. Sharp exhibited and explained the advantages of a vertical camera, or stand, which had been designed for him by Mr. Herbert A. North. It consisted of a sort of frame or trestle, by which the camera was supported in a horizontal position over the object to be photographed. The object was placed on a sheet of plate glass, and all the portions of the stand above it were blackened, so as to overcome reflections. Where a white background is desired, a white card is simply adjusted below the glass plate, out of the range of the focus. For a black background a black bag is suspended under the object, the result being all that could be desired. Dr. Sharp exhibited on the screen some results obtained in the ordinary way and with the use of the vertical stand, the advantages of the latter method being very marked.

Mr. John Carbutt gave an interesting talk on "Modern Lantern Slide Methods," illustrating what he had to say by a number of slides which he had made, some of them from negatives borrowed from different members for the purpose.

Among other things, he said, as the pictures were projected on the screen, slides 14 and 15 are from same negative by contact, the sky very much scratched by daily use in the factory in testing lantern plates. To remove the defects in the sky is a very simple operation; this negative requires an exposure of 25 seconds at 4 feet from a 16-candle power Edison lamp; during the exposure the sky is partly shaded

with the fingers closed together, moving the hand slightly. After developing and fixing, the slide is merely passed through or dipped in water to remove the hypo solution from the surface, without any attempt at washing; then, holding the sky part downward, dip a tuft of absorbent cotton in a one per cent. solution of red prussiate of potash; commence at lower edge and carefully work over the surface of the sky and around the building and trees, then rapidly pass the cotton over the entire surface of the slide; quickly immerse in water to stop the action, and wash thoroughly. Where the negative possesses a clean, even sky, do not clean it off; a clean, even tint to the sky is far better than clear glass. Nos. 30 and 31 will illustrate what can be done in developing to secure full values in the negative. The subject is the United States cruiser "Columbia," from an 8 x 10 negative, by our President, Mr. Burroughs. The clouds in the negative are of greater intensity than the highest light on the cruiser, and by continuing the development until the clouds were well defined the body of the vessel and the water would be too dark; therefore to stop development when the vessel and water were sufficiently brought out would leave the sky blank, as shown in 30. But if, after washing off the developer, you pass over the vessel and water a tuft of cotton wet with a 10 per cent. solution of potassium bromide, then with another tuft dipped in the developer, you carefully work over the sky, the clouds will develop and produce the harmonious result, as shown in slide No. 31. The same treatment is applicable to views of water-falls, which are usually surrounded with dark green foliage, as in slides 26 and 29 previously shown—Bridal Veil and Factory Falls, Pike County. When the surroundings were fully developed, the slides were washed, then the end of my finger was dipped in the developer (eiko-cum-hydro) and passed lightly over the water part of the view, when detail, not before visible, made its appearance. Before closing my remarks I wish to call your attention to an aid in securing a sharp focus of the image when reducing in the camera. I first get the size of reduction desired and an approximate sharp focus; it is here that at times it is very difficult to decide on the sharpness of the focus. To render this easy of accomplishment, I remove the negative and replace it with a positive of a line subject, such as I have here, which happens to be a map of the streets of New York, placing the film side towards your lens; you can make with ease and accuracy a sharp focus, then replace your negative and make your exposure. I have a 4 x 5 and 5 x 7 transparency, which I have the pleasure to present for the use of members making slides in the Society's cameras.

Dr. Charles L. Mitchell supplemented Mr. Carbutt's remarks by some notes from his own experience, and showed some examples on the screen. His slides were all made by reduction in the camera, and the local modifications which Mr. Carbutt had effected so skilfully in development he managed by a process known to all photographers as "johnnying." The portion of the negative to be held back was simply shaded by a mask during the exposure. He had also found it of great advantage to have at hand two grades of lantern plates—a rapid and a slow, the former for use with dense and hard negatives, giving a full exposure so as to diminish contrast. A slow lantern plate should be used in working with thin and soft negatives, giving a short exposure so as to obtain brilliancy and contrast. In the latter case the tone will be black or gray; in the first, warm brown.

Mr. F. F. Staples demonstrated the method of working the "Nepera" bromide paper.

Adjourned.

**The Photographic Society of Japan.**—A regular meeting of the Society was held on Tuesday, January 29th, at 5 P. M., Mr. K. Ogawa in the chair. The minutes of the last meeting were read and approved.

Mr. K. Nakahara showed a cyanotype print, much superior to anything of the kind generally seen. It was from a mechanical drawing, line sectioned, and showed deep black clear lines on a perfectly white ground. Mr. Nakahara described the precautions necessary to get this effect, and the difficulties that were likely to be met with. Briefly put, the process is as follows:

A paper highly sized should be used. Small sheets can easily be worked, but the difficulty increases greatly with dimensions, a sheet about 20 x 18 being the largest that he had, so far, been able successfully to manipulate. Want of equality in the depth of the lines, and staining in the whites are the defects difficult to overcome. All manipulations are with a view to avoid these.

The sensitizing solution is follows:

Gum Arabic .....	15 grams.
Water .....	110 c.c.
Tartaric acid .....	2 grams.
Chloride of sodium (common salt) .....	9 grams.
Sulphate of iron .....	10 grams.
Iron perchloride .....	15 grams.

In mixing the solution, the gum arabic is first dissolved in the water by the aid of heat, and the other salts are added whilst the solution is still warm.

The solution is spread over the surface of the paper with a sponge, and after allowing a little time for it to penetrate the surface all superfluous moisture is removed, using the sponge again, well wrung out. If this precaution be not attended to, the depth of the lines is not equal. The paper is then dried as quickly as possible. If the drying is not rapid, the whites stain.

Exposure is somewhat longer than would be needed with sensitized albuminized paper. The color of the sensitized paper is yellow. During exposure, all but the lines turns to white.

Development is by a plain aqueous solution of gallic acid, the strength of which is not important. Care must be taken not to leave the print too long in the developer, otherwise staining will result. After development the print is rapidly washed, when superfluous moisture is carefully sponged off the surface. If this precaution be not observed, inequality in the depth of the lines will result.

The success of the process would appear greatly to depend on the sponging off of superfluous sensitizing solution and water from the surface of the paper, and on quick drying after sensitizing.

Mr. R. Konishi showed a "Moderate Power Tele-Photographic lens," consisting of a Dallmeyer Rapid Rectilinear of  $8\frac{1}{4}$  inches focus, with a negative element of 4 inches focus by the same maker. The Rapid Rectilinear was fitted with a pair of the new Burchett color screens, one green, the other yellow. These are used for getting orthochromatic effects which it is claimed can be got with their aid, even on ordinary plates.

Mr. Konishi presented to the Society samples of Marion's "Academy," and "Special Portrait Plate," as well as of Illford's Orthochromatic plate. These were handed over to Mr. W. K. Burton, who was instructed to test them, and to report to the Society at his earliest convenience.

The proceedings ended with a vote of thanks to the Chairman.

*Friday Evening, February 15th.*—The tempestuous weather greatly thinned the gathering at the Photographic Society's Lantern Meeting held in the Masonic Tem-

ple. It was matter for regret, for the slides shown were of high merit, worthily sustaining the standard set in previous exhibitions of this kind. First of all was shown a negative taken that day by the incandescent light, an illuminant which Prof. Burton thought not quite so effective for photographic purposes as the electric light, but still of such a character as to produce good results. The selection of slides illustrating Japanese customs, trades, manners, and people, to be sent to the American Lantern Society, were next exhibited, after which Dr. Wood described some slides which had been made from negatives taken in the Hokkaido the previous summer. After an interval, a splendid collection of views on, of, and around Fuji were shown, in the course of which Professor Burton described the ice-caves which he had stumbled across, as it were, in the course of a survey upon the lower slopes of the famous mountain. He propounded the theory that these marvellous caves had been formed through an accumulation of immense snow-drifts which had been overwhelmed by a huge mass of scorïæ during some far-back disturbance of the volcano; and this snow had gradually turned to ice, first by heat and then through compression. The learned Professor arrived at this conclusion upon noticing that the ice of the caves was stratified, a condition not attendant upon glacial formations. A curious thing in connection with these caves is that a long narrow tunnel, never yet thoroughly traversed, leads from the far end, and through this tunnel rushes a blast of air sufficient to extinguish a torch. Professor Burton advises a trip from Yokohama to the neighborhood of these caves, claiming that the scenery to be passed through on the way to them is unsurpassed for grandeur and beauty in the whole of Japan.

**The Lowell Camera Club.**—At the annual meeting, held on March 11th, the following officers were elected: Paul Butler, President; W. P. Atwood and F. T. Walsh, Vice-Presidents; M. A. Taylor, Treasurer; G. A. Nelson, Secretary; A. H. Sanborn, Librarian; Charles Runels, Arthur Staples, Fay H. Martin, Directors; J. C. Wadleigh, John I. Coggeshall, William Corner, W. H. Dodge, Philip R. Hovey, Membership Committee.

It was voted to enlarge the club library, which is kept at the rooms of A. H. Sanborn & Co., Central Block. A committee was appointed to take charge of an exhibition of amateur photographic work, to be held in the fall or winter. It is proposed to have this exhibition open to amateurs outside of the club as well as to members. Prizes will be offered for the excellence of work done during the year.

**Young Ladies' Camera Club** of the Young Women's Christian Association, Minneapolis, Minn. On March 6th Miss Katy Bell Chadburn related her camera experiences in Holland, Japan, and other countries, and Miss Minerva Turnbull gave incidents of snapshots among Alaskans, also in California and Yellowstone. The notice sent out of the meeting was neatly gotten up, and had a picture on the front page of a young lady in the act of pressing the button of a Kodak with the question printed underneath: "Come on, sir; here's the place—stand still."

It must be a lively young ladies' club, and the first distinctive ladies' camera club that we have ever heard of being organized in the United States.

**Orange Camera Club.**—At the annual meeting, March 20, 1895, the following officers and committees were elected: Wm. H. Cheney, President; Edward H. Graves, Vice-President; Chas. A. Lindsley, Treasurer; Alfred C. Bode, Secretary; H. E. Matthews, Chairman House Committee; Herman Joerns, Chairman Finance Committee; H. R. Halsey, Chairman Membership Committee; H. R. Terhune, Chairman Lantern Slide Committee; C. W. Baldwin, Chairman Library Committee.



## Editorial Table.

**THE GOERZ LENZ.**—C. P. Goerz, the maker of the celebrated double-anastigmatic lenses, has opened a branch office in New York at 52 Union square, East, and is prepared to supply his lenses to the American users without delay. These lenses have been received with favor in various parts of the world, and have the reputation of possessing rapidity and optical power superior to many other kinds of lenses. By several authorities they are regarded as the most perfect of modern lenses, as they cut with full opening (F: 7. 7) a plate of the length of nearly the focal length sharply to the edge, and, therefore, for instantaneous exposures and other purposes, are said to be without equal. They are made of the well-known Jena glass, after a formula patented by Mr. Goerz. By sending to the foregoing named office, an illustrated catalogue, giving sizes and prices, will be supplied.

**A BALTIMORE SUPPLY STORE.**—We are informed that the business of the Cummins Photo Stock Co. will not be affected by the death of Mr. J. S. Cummins, but will be continued under the same style of firm as before. We believe this house has the reputation of being the best supply store in Baltimore, Md., and is located at 106 North Charles Street.

**The Great International Prize Competition and Summer Photographic Exhibition**, to be held at the Agricultural Hall, London, England, from June 29th to July 6th next, is now fairly launched. There will be two distinct competitions, one under the Conference rules, with H. Horsley Hinton, Rev. F. C. Lambert and H. P. Robinson as Judges (whose names will appear on the prospectus), in which the classes are as follows:

- |                              |                                  |
|------------------------------|----------------------------------|
| 1.—Landscape.                | 7.—Animal Study.                 |
| 2.—Seascape.                 | 8.—Smoking Picture.              |
| 3.—Hand-Camera Work.         | 9.—Architecture.                 |
| 4.—Figure Studies and Genre. | 10.—Scientific Work.             |
| 5.—Beginners.                | 11.—Instantaneous and Snap Shot. |
| 6.—Ladies' Work.             | 12.—Process Work.                |
|                              | 13.—Society Competition.         |

Gold, silver and bronze medals are offered in classes 1 to 4, and silver and bronze medals in classes 5 to 12. The prize for class 13 is an optical lantern. The judging in classes 1 to 8 and No. 13 will be from the artistic standpoint; in classes 9 to 12 other matters will be taken into consideration. The prints need not be framed, and the entrance fee is 1s. per print up to a mount or frame of twenty inches; above that, 2s. per print.

The second series of competitions are for amateurs only, who have not previously gained medals or prizes at a photographic exhibition. The judges' names will be announced later. The classes in this are:

- |              |                             |
|--------------|-----------------------------|
| Landscape.   | Architecture and Buildings. |
| Marine.      | Holiday Work (set of six).  |
| Portraiture. | Snap Shots (set of six).    |

In this competition the winning pictures (and perhaps a selection from the others) will only be hung. Silver and bronze medals, hand cameras by the Eastman Co., Adams & Co. and the Vedette Co. are offered. The Eastman Co. also offer £3 3s. and £2 2s. respectively, for each first and second prizes upon "Solio" or "Platino-Bromide" paper, and Cadett and Neal offer prizes for work upon the "Cadett" plates. The entry fees and most other details are the same as for the other competitions. A somewhat novel feature of the exhibition generally is the fact that *Black and White*, one of the most artistic weeklies, will publish a special eight-page supplement with their issue of June 29th, illustrated by reproductions of some of the prize pictures, and paying for them at the rate of half a guinea to two guineas, according to the size of reproduction. The exhibition is being well received upon the Continent, and editors of foreign papers are becoming agents to receive and despatch competition prints. Work is expected from Australia, New Zealand, South Africa, Japan, America, India, etc., as well as the Continent generally. Prospectuses, etc., may be obtained from Walter D. Welford, general manager, 59 and 60 Chancery Lane, London, W. C., England.

*"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 142, Vol. VII.*

ammonia  $\frac{1}{2}$  part, water 480 parts, with the addition of a proper quantity of bromide of potassium. Ferrous oxalate does equally well, but in either case the developer should be abnormally weak. With correct exposure, negatives have been made in this manner, of slow-printing quality perhaps, but giving proofs as good as those printed from the original negative.

**NEGATIVE PAPER AND FILM**—The introduction of the negative paper and then the film seemed to introduce a new era in photography. Briefly, the sensitive emulsion was spread upon paper, exposed, developed, cleaned and washed as ordinary glass plates. So far so good, but in order to print from these negatives, it was necessary that the paper should be so treated that it should become transparent or at least translucent, but the various substances recommended for this purpose were of such a character as to render the whole process "messy," with the prospect of having to repeat it in the near future, and an objection to them arose from the presence of "grain," which was reproduced very plainly in lantern slides. To meet these and other faults the negative film was introduced, of which it was said that it had all the advantages claimed for the negative paper, without any of its disadvantages. It consists of an insoluble, sensitive gelatine emulsion attached to a paper support by means of soluble plain gelatine, the paper serving as a temporary support during the operations of exposing, developing, clearing and washing, after which the film is laid down upon a prepared sheet of glass, the paper removed by the aid of hot water and the paper replaced by a sheet of gelatine, giving a clear, transparent, flexible negative of good printing qualities, having *all* the advantages of glass and neither its weight, fragility nor other disadvantages. But they had their faults also. Sometimes the paper support would fail to come off, or would come off irregularly, and the gelatine sheets would at times refuse to connect evenly. Both of the above have given place to the celluloid or flexible film.

**NEGATIVE TRANSFER PROCESSES**—There are many processes for this purpose, some of which will be mentioned elsewhere. The following is a very simple one: An impression may be made with regular printing ink from an engraving or transfer or any drawing. If the paper was dampened, it should be allowed to become perfectly dry again. Then gum arabic ground to the finest powder should be dusted upon it. Upon this the impression is laid in the damping book (the damping paper which is generally used for damping the transfer impressions) and allowed to remain until the gum arabic

is softened, but not dissolved, just long enough, so that on being pulled through the press, the impression will stick to the clean polished stone. It will not be a difficult matter for the transferrer to observe the right moment; dissolving the gum arabic a little more than necessary and allowing it to dry somewhat before proceeding, will give a better result yet. It is evident that in case the gum arabic is dissolved too much the lines of the work spread out; if, in the contrary case, the gum arabic does not stick well, a broken transfer will be the consequence. After being pulled through the press, the paper should be removed without loss of time and with the greatest rapidity; for, should the gum become dry, the paper can only be removed by moistening the back. That this is a risky thing all transferrers know. When the paper is removed, the gum upon the stone should be fanned perfectly dry. A marginal line should be drawn on the stone, which is to show no work gummed or fanned dry. Now the stone may be rolled up with fatty transfer ink, and after washing out the transfer which thus has been transferred with gum to the stone, it will appear in white on a solid background.

**NEGATIVE VARNISH**—A new medium for protecting glass negatives and positives from injury by dampness, friction or moist paper has recently been introduced under the name of ivory varnish, and so far it seems to be an excellent and safe compound. As it dissolves pyroxyline, however, it cannot be used for collodion plates, but is perfectly applicable to gelatine negatives. The latter need not even be heated when the varnish is applied, but the preparation is merely flowed over their surfaces and dried in an ordinary temperature. The result is a protective film of extreme hardness which perfectly resists the action of all moisture. A negative thus varnished, after being thoroughly dried, may be immersed in hot water of 120° F. and wiped dry with a rag without injury. This quality makes the "ivory varnish" an excellent one for transferred bromide prints. The damar varnish heretofore used for this purpose, being softened by high temperature, will scratch and dull when touched. A good negative varnish is made as follows: Bleached shellac 10 drachms, picked sandarac 5 drachms, alcohol 12 ounces. Dissolve the shellac as completely as it will and then filter through paper. Another large filter is required and should be well soaked in clean alcohol. Pour off gently so as to keep the thicker parts for the last. The last portions may be thinned with an ounce or two of alcohol to enable them to get through and still have a sufficient body. Now add the sandarac to the filtrate and filter again,

THE  
AMERICAN AMATEUR PHOTOGRAPHER,

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MAY, 1895.

No. 5.

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Mechanical Aids to Artistic Photography.

BY MAX HOLZBERG.

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the difference between the two sound producers. When the first Lon-  
don Salon Exhibition was held by a few men who had recognized the

power of photography to produce something greater than mere mechanical representation of scenes the public were amazed. "Why, they are not a bit like photographs," was the remark that was heard from many of the visitors, a remark which was undoubtedly the result of the albumen print with its glazed surface having been taken as the typical photograph. It was difficult to imagine that the soft images without painful detail, produced in artistic colors upon some rough material were photographs.

It is not our intention here to enter into any discussion as to what is an artistic photograph and what is not, but rather to detail a few mechanical methods by which photographs that in our opinion may be termed artistic, have been produced. The use of these methods to obtain satisfactory results must be left to the individual photographer. A certain amount of tasteful selection must, of course, be exercised.

In the future, when opticians have succeeded in satisfying the demands of scientific photographers in the manufacture of a perfect lens that will give the most perfect detail upon every square millimeter of the plate, it is hoped that they will turn their attention to the making of a lens that will satisfy the wants of the photographer who is aiming at picture making. In reviewing the photographs exhibited at the recent exhibition held in New York, we could not help noticing the painful efforts of the photographers to include as much unnecessary detail in each photograph as Zola will put in one of his novels.

Take a portrait, for instance. We do not want to study every little mole, wart or other blemish upon the face of the sitter, but yet the photographer will use the smallest stop possible to get a reproduction of the minutest detail, and then endeavor to improve matters by pencilling in a lot of stipple work, giving the person photographed the appearance of a waxed image, or as if suffering from a severe attack of smallpox.

How much better than this it is to diffuse the focus slightly, and so obliterate unnecessary detail, without losing the characteristics of the face. By employing some method to produce the effect, we get a wonderful softness which we can only admire. It must not be imagined that any picture made out of focus will be a success. Many have already made themselves ridiculous with their attempts to imitate the so-called "impressionist" school. As a rule they overdo it, and we get a confused mass of light and shade, which one person will take to be the portrait of a cow and another a moonlight effect on a lake, and such a picture is termed "naturalistic." In attempting to improve on the purely mechanical photograph, avoid, above all things, eccentricity. It is never taken for genius by the sober minded.

There are very few lenses that will give the desired soft or diffused effect by altering the focus after once set. Dallmeyer, many years ago constructed a doublet lens, so arranged that the back and front combinations could be slightly separated to give such an effect, but these are unattainable at the present day.

Vibrating the camera was another curious method that was recommended. A cord was tied from the center of the camera tripod head to a heavy weight on the ground. As soon as the lens was uncapped a vio-

"THE CRITIC."

BY W. B. POST.

lin bow was drawn across the cord, and a vibration of the whole was set up, showing the image out of focus by its continued displacement.

Another method that has been satisfactorily employed consisted in holding a spirit lamp beneath the lens during the exposure of the plate. A rarefaction of the air in front of the camera was the result, and the image thrown out of focus. The effect is often apparent on one of our July days, when the heat rays ascend from the stone walks.

If a time exposure be made partly with a small diaphragm and partly

with a full aperture, a peculiar soft effect is often produced, but for this purpose of course slow plates must be used.

Mr. Chas. Whitney, in a recent issue of the *British Journal Almanac*,

BY L. B. SCHRAMM.

"LANDSCAPE STUDY."

gives another method somewhat similar to this. The following is what he says: "I find I can produce any degree of softness or blurring desired, and the means are simple. It is to use in the place of the ordin-

ary diaphragm, others made of cardboard, with apertures ranging from  $f/8$  to  $f/16$ , or thereabouts, and on these are glued rather thick collodion films with apertures equivalent to about  $f/30$ . I also find the thickness of the collodion film a most important factor in giving to the diaphragm its fuzzy-producing qualities. If I wish to give only a soft, pleasing effect to the picture I use a diaphragm with an opening on the cardboard of  $f/16$ , together with an opening in the collodion film of  $f/30$ , and if I wish for more fuzziness, I increase the area of the disturbing element (the collodion film) by enlarging the hole in the cardboard to, say,  $f/12$ , or  $f/8$ , and keeping the hole in the collodion film the same or making it smaller. If I wish to carry the effect to an extreme limit I use a thicker film of collodion, or two films combined, on the same diaphragm, and it may also be done by using one film, but without any hole at all."

A diffused effect can also be obtained in printing by the interposition of a sheet of transparent celluloid or gelatine, or a thin plate of glass between the negative and the positive paper

In detailing these methods of attaining diffused images we do not

IT W F FOT

"FROM THE PASTURE."



wish it to be understood that pictures so made must be artistic. It is merely one of the many devices which the photographer can make use of to obtain certain results, which may or may not be artistic. Much will depend upon the ability of the photographer to decide whether such treatment is desirable or not, whether suitable to the subject or whether producing the effects desired.

In many cases it is far from desirable to throw the entire image out of focus. It is difficult to lay down any guide; for this, the amount of artistic perception of the photographer himself comes into play, and is shown in the results. In a landscape picture, for instance, by focussing the nearest objects and throwing the receding planes out of focus, we are often able to obtain a certain amount of aerial perspective, which in many cases is in every way desirable and lends an additional charm and artistic effect to the picture.

Again, in a photograph of figures with a landscape, where we wish the latter to be subordinate to the former, we concentrate the focus of the lens upon the desired objects, throwing the remainder slightly out, so as to lose detail which would be calculated to attract the eye away from the principal object.

The majority of cameras sold at the present day are, in our opinion, fitted with lenses of too wide an angle. We do not want to take in the whole of the wide, wide world in each picture. The angle of vision is only about fifty degrees, yet lenses of ninety degrees, or even more, are by no means uncommon.

A very great deal can be done in focussing and exposing that will aid in making artistic pictures instead of photographs. Apart from the selection of view, the composition of the various objects upon the plate and the choosing of the most suitable lighting, we are able, as already explained, to do very much by careful adjustment of focus and in exposing. If the plate be not too rapid, and for landscape work on a still day we much prefer a slow plate, the lens can be shaded during the exposure to give certain desirable effects which would not be obtained by simply uncovering and closing up the lens.

In these and many other ways the photographer can use the camera to obtain pictorial effects that show something more than the mere mechanical photographs usually produced. An automatic machine would give as good results as these.

It is usually considered by the amateur photographer that a bright and sunny day is the very finest for photographic work, yet it is an acknowledged fact that some of the most artistic effects have been produced on misty, foggy or rainy days. English photographers have been fortunate in securing these effects, the climate being of such great assistance.

The effect on a misty day is naturally to give prominence to the nearest objects and distance to the remainder, a pleasing contrast to the photograph where foreground, middle-distance and background are all one confused mass.

We have seen artificial mist produced by smouldering bonfires, giving one large volume of smoke. This is a little dodge that it is well to know of. Good effects have been produced by it, but a certain amount of judgment and caution would naturally be necessary.

BY C. E. PARCOATE.

"OFF MONTAUK."

Can a negative be developed artistically? is the next question. While the photographer has but little control compared with the painter, yet, at the same time, if he thoroughly understands what he is doing, he can control development to a far greater extent than many imagine. He can hold back the development of certain parts that he does not wish to appear too white in the finished print, and can bring up detail in the shadows where he desires it.

From what we have said it will be seen that, although photography

may be a purely mechanical process, viewed in a certain light, yet the photographer has the power to control the results in a very marked way, and can produce a result which will be widely different from that which would be produced by the photographic automaton.

So far, we have only considered the making of the negatives. Very much more latitude is given in the production of the finished print, and regarding this we shall have something to say in a future issue.

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### A Word of Encouragement.

BY FRED FELIX.

ACH season—spring is always taken as the beginning of operations for amateurs—sees the addition to the list of many new aspirants to photographic honors. There are numerous and varied motives that prompt the investment in a camera and outfit, one being the thought that by paying the necessary amount to the dealer something is secured that will take and finish photographs automatically, as it were, with no more trouble or expense than that involved in the original purchase. It would be well were such persons better informed as to the real difficulties of picture making before they begin to fail in their incomplete efforts, become discouraged and are ready to give away their outfits, as is so often the case. There are always so many things to learn, even for those who are considered adepts, hence it is evident that to start out properly the novice has to undertake quite a lesson. It is the best thing imaginable in the beginning to consult and be guided by some one who has practical experience, either as an amateur or professional. Such a person can usually give most valuable advice from the very time of trying to decide what kind of instrument is adapted to the especial wants of the operator, and by suggestions and demonstrations can be of service at all times.

With so many the charm of picture making is at once lost when it is discovered there are difficulties connected with it, or rather when it is found that finished photographs cannot be made without some little trouble, and they are ready to dispose of their outfits and quit work altogether. The trouble with some who become discouraged is, they think there is nothing to be found that is worth photographing. They make a

BY WILHELM DREFFER.

## "RURAL CRITICS."

few attempts at this and that, and, because a work of art is not forthcoming, they believe they will never be able to secure anything worth admiring; but such ideas are always erroneous. There are abundant subjects for pictures at all times. Some people appreciate this fact and see beauty in everything that surrounds them, not to speak of the interest and pleasure afforded by making a pictorial record of the things about the home, business, or whatever is closely associated with the daily life. Those who imagine they cannot succeed in securing anything worth the time and trouble necessary to take it, should practice contentment, as in nearly every instance it will be shown that almost every person has some opportunities for work that would be considered enviously as great advantages by another worker not so situated. Thus, the city resident might, perhaps, think the absence of streams, pastures and general rustic beauty prevents the collection of pictures of interest or value, but he has hundreds of things the rural worker is longing for—parks, busy street scenes, public buildings, opportunities of catching prominent men, the picturesque street gamin, and many other things which only a city can afford. The one in the country, who misses all these, has the great privi-

lege of seeing Nature in every phase of its continuous glory. How many beautiful pictures are possible when the forests, fields, lanes, etc., are at hand to allure the artistic eye. No one need fear a lack of opportunity for photographic work of an acceptable order. It is the point of view that has much to do in the matter. If the associations are appreciated the field for work is always and varied.

A remedy for discouragement, and an excellent plan for all workers, is to use the best endeavors in everything that is done. There are so many points in favor of this. If the best efforts are expended on a picture, it gives one the satisfaction of knowing it is not lacking in anything one could possibly do at the time to improve it—it is the best one knows how to do, and whenever that can be said of a photograph, there is cause for satisfaction. Progress will be assured, if this effort is taken at every opportunity that presents itself, and if the first pictures that are attempted do not please in every particular, subsequent ones are sure to do so as a result of this policy. Besides the advantages artistically this advice carries if followed, it proves a matter of economy. Many plates, much paper, and innumerable mounts are wasted by inattention to details, and while, at a glance, they may not seem of value, they cannot fail to amount to something if their waste continues, as is done in many cases. If an amateur takes these things into consideration, it is very probable that the discouraging parts of the first experience will be overlooked, and the work continued with bright prospects for the future.

### Soldier's Rest.

BY ROBERT L. COHEN.

THE historical interest attached to this building is what gives value to the illustration accompanying these notes. It has always been known as "Soldier's Rest," and was erected in 1853 by James Crutchett, who used it as a factory for the manufacture of canes, the material for which came from the trees and flooring of George Washington's home, and for years was known as the "Mount Vernon Cane Factory." It was situated on the corner of North

"SOLDIER'S REST."

BY A. S.

"A VENETIAN NOOK."

#### CAN AMATEUR PHOTOGRAPHER.

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ington, D. C., adjacent to the Baltimore and Potomac River Railroad, and was used by regiments during 1861 to 1862 while awaiting transportation. Many old soldiers claim it as the building in which they ate their first meal in the city. It was also occupied as an emergency hospital during the war, and since that time has been used as a warehouse until it was condemned as unsafe, and destroyed in 1941.

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#### THE ART OF Amateur Photography.

OF THE AMATEUR PHOTOGRAPHER.

DR. HUGO ERICHSEN.

AMATEUR photography would be far more popular than it is at present if amateurs would know a little more of the principles of art. It is not sufficient to have a knowledge of developing and printing, to be versed in the *technique* of photography, but the amateur should know all about composition and lighting, and should, moreover, have some natural taste in order to become a genre photographer worthy of the name.

What is said here of the amateur applies, of course, with equal force to the professional, who sins as often against the canons of art as his more inexperienced brother. Who has not seen the abominable postures exhibited by photographers? The forced smiles, grotesque poses, etc. There should be nothing "stiff" in everything represented in it should appear as if fully the artist may have composed the picture. If fully the composition has been studied, the result will appear.

For the most effective pose or grouping, it is a good idea to make several smaller photographs, for this will enable the photographer to make the most suitable arrangement before he settles on which he proposes to impress the creating experience he will be able to dispense

with this precaution, but in the beginning he will find it exceedingly useful.

In arranging a group a photographer should not hesitate to turn the back of some of his figures toward the camera if it will enhance the effectiveness of the composition.

A celebrated painter, when asked how he mixed his colors, replied: "With brains." The amateur, in order to become a successful genre photographer, must not only mix his developer with brains, but employ the same medium in the composition of his pictures, or he will be a failure. The more he studies the subject, the better he becomes versed in lighting and composition, the more competent will he become to produce a genre photograph worthy of the name.

Some of the best genre pictures may be taken with a detective camera, because the persons included in the picture are not aware of being photographed, and therefore assume a natural position. But the amateur should not imagine that because he has taken a good photograph of the kind he is a full-fledged genre photographer. Only when he is able to *design* a picture that will prove artistic in every sense of the word will he merit the title of a genre photographer.

Particular attention should be paid, too, to accessories. In the large cities these are easily acquired. Costumes may be rented, models hired by the hour, and odd pieces of furniture and vertu picked up at the innumerable second-hand stores that abound in every town of any consequence. Auction sales also afford an opportunity to increase one's stock of accessories. But clever amateurs, who do not enjoy these facilities to acquire the necessary adjuncts to genre picture taking, may do wonders in improvising that which they are unable to buy. Costumes may be copied, historically correct, from one of the numerous books on the subject, and furniture of the olden time fashioned at home by one who is handy with tools. They may not appear to be quite the thing, when regarded with a critical eye, but they will look all right in the photograph, you may be sure. As for models, where it is impossible to hire a professional model, which is always to be preferred, one must perforce have recourse to one's friends, which is not always so satisfactory. And yet some amateurs have produced excellent genre photographs with the most meagre means at their command, whereas those who had all the aids that money can buy often met with signal failure. A lack of proper accessories should not, therefore, deter the amateur from entering the entrancing field of genre photography.

The amateur may ask in despair: "What shall I photograph?" If he will but look about him with observing eyes he will find a thousand and one subjects and objects that are worthy of his attention. He will find,



for instance, more street scenes that are worthy of perpetuation than he can afford to photograph. He should not attempt to do too much in this direction, and ever be mindful of the fact that one perfect photograph is worth a dozen imperfect ones. The European tourist has an opportunity which his home-staying brother of the camera may well envy him for, for he is enabled to rent historical costumes that have been actually worn centuries ago and to group his models in historical surroundings, thus producing a harmonious ensemble that could not be produced otherwise. But we who have not these advantages may do almost as well by using a natural background—the woods, the lake or riverside. Nature is older than the most antiquated structure erected by the hand of man, and therefore the costumes of all periods will harmonize with it. It is the cheapest and the best sort of a background it is possible to find. Try it this summer and you will be pleased with the result.

## How To Make Oil Paintings.

BY EDWIN B. GILES.



Present it seems that the minds of all photographers, professional and amateur alike, are turned towards photography in colors, and while some steps have been taken in this direction the goal appears as yet as far off as ever, so while waiting for greater minds to show us how to take pictures in colors, we propose to show how oil paintings, and creditable ones too, can be made by the average amateur with the aid of his own negatives, a few tools and a little taste. It may, of course, be claimed that it is nothing but a new application of things already well known. But the superior results which are to be obtained by even the tyro at such work, render it well worth the slight expense involved.

"THE TRUANT."

BY A. B.

The first desideratum is a good negative, it being preferable to commence with a 5 x 7 bust; a positive should be made from this on one of Carbutt's Special sens. 23 Strippers; this can be done by contact, using a No. 2 kerosene

lamp for light, and with an average portrait negative giving about ten seconds' exposure ; development should be for detail, all unnecessary density being carefully avoided ; the result should be a positive, showing full detail even in the strongest shadows ; of course, this is not always possible, but we are simply indicating the objective point which should be worked for. It is needless to add that the positive should be washed free from hypo and dried thoroughly. The next thing to do, if you are not the happy owner of a retouching desk, is to construct one ; this is easily done by mounting a 10x12 sheet of fine ground glass at an angle, so that all light is obtained from the back. With the retouching desk ready the positive is laid on the ground glass face up, and the color applied. Tube oil colors should be used, laid on with little or no thinner ; work in all the prominent details first, such as the eyes, earrings, breast pin, laces ; after these are dry the flesh color and drapery may receive attention. Make little or no attempt to paint in the ordinary sense ; the principal thing is to lay the colors on solid so that nothing can be seen through them. In getting ready the flesh color mix three tints, light, medium and warm, divide the face with imaginary lines into three parts, forehead down to the eyes, center to below the nostrils, the third being chin and neck ; use the light palette for the first, the warm for the center of face and the medium for chin and neck ; of course all the tints should blend together somewhat. While the flesh tint is still fresh take a little carmine on a fine camel's hair pencil and work it into the flesh tint on the cheeks ; the proper position for the blush thus made can be readily gauged by observing a few of the lithographs to be found in cigar stores ; these are made by skilled lithographic artists, and while they may be somewhat out in color, are generally correct in technique. The lips should also be worked in in the same manner, and a slight touch of carmine in each nostril and the inner lobe of the ears. Laces should be treated to a solid wash of white ; the photograph will give all the detail. As the work proceeds, the plate can be lifted and viewed from the other side, but it should be remembered that the green photo glass will naturally make the flesh tints appear duller than they will in the end. Drapery and background should be treated in accordance with their texture ; lay the colors on solid and make no attempt to shade, unless their happens to be a very strong high light on the drapery, when a little white may be mixed with the color to lighten it up. The best background for a portrait is a plain one, which can be treated to a broad wash of rich crimson lake or royal blue. We give at the end of this article a few simple directions for mixing the various tints. Every part of the positive having received a coat of paint, and there being no margin lines showing between the colors, it can be

put aside to dry thoroughly ; this will take a day or two, sometimes a week, on account of the non-absorbent nature of the positive. When dry take a piece of painter's canvas or plain stout muslin about two inches larger all round than the positive and glue it down on the painting ; dextrine is the best for this purpose, but weak Le Page's Glue may be used (this latter however, is inclined to dry hard and bony), dry again, and pulling the muslin back, cut through the film of the photograph about one-eighth inch in all round the plate, then with firm, steady movement, strip the whole from the glass, commencing at one corner and working diagonally across the glass ; mount on a wooden stretcher. Your oil painting is now complete, and if the above directions have been followed carefully, with the average amount of taste in selection of colors, it will be worthy of a gold frame and a prominent place on the wall, being indistinguishable to ordinary eyes from regular oil painting, and much superior to the great majority of the latter when considered as a portrait.

In writing the above directions we have confined ourselves to a portrait as being the simplest for the beginner, but the process has much greater possibilities for those who have a slight knowledge of colors to commence with ; paintings may be copied with wonderful fidelity, and landscape negatives may be reproduced in all the glory of Nature's colors. After the first trial nothing smaller than  $6\frac{1}{2} \times 8\frac{1}{2}$  strippers should be used. If the negative is smaller the positive can be made larger by making the exposure in the enlarging camera, the slight fuzziness of an enlargement being rather an improvement to a landscape than otherwise.

General Flesh Color.	White.	Naples Yellow, Vermillion, Lt. Red.	
<i>Eyes.</i>	Blue. Brown. Grey. Black,	Fr. Ultramarine. Umber Black, Lt. Red. Cobalt, Black, Lt. Red. Ivory Black, Burnt Sienna.	Tone up With White.
<i>Hair.</i>	Brown. Blonde.  Black. Auburn. Gray.	Umber, Sienna, Vandyke Brown. White, Naples Yellow, Raw Umber Burnt Sienna. Black, Umber, Naples Yellow. Umber, Madder Lake. Vandyke Brown, Cobalt, White.	

**Our Prize Set of Lantern Slides.**—Mr. W. O. Withrell, of the Boston Camera Club, writes regarding the set shown before the Club on April 8th : "Thank you very much for the use of them. They were shown to-night before a large audience, who admired them very much."

The set was shown on April 17th before the Providence Camera Club. Mr. R. Clinton Fuller of the Club, writes : "That the set was appreciated by our members ; many of the slides were repeated at request of interested members."

On April 30th the slides were shown by the Portland Camera Club.

## English Notes.

BY GEORGE DAVISON.

**CAMERA CLUB CONFERENCE.**—The 1895 Photographic Conference was held at the Camera Club on the 2d and 3d of April, and it has been the chief event of the past month. The complete proceedings consist of an exhibition of photographs by members, lectures and discussions during two afternoons and evenings, a special public exhibition of lantern pictures, and an annual dinner. The exhibition of photographs by members is an annual representative show of all work sent in. It is not selected nor restricted, but the present one exhibits very distinctly a general improvement and levelling-up in respect of picturesque and decorative qualities in the making of photographs.

It shows that the great body of photographers are gradually learning that the same conditions as to creation and criticism apply to photographic pictures as to any other graphic artistic method of representation in black and white,

It has been a hard lesson to teach and learn, but the general domination of mechanical standards and inartistic restrictions in photography is being slowly upset, and photographers are breaking through scientific conventions and daring to see and feel for themselves, and are using their apparatus to express that sight and feeling. This courage and confidence are begotten of clearer observation and the spread of the knowledge of certain facts of art, quite common amongst the artistic community.

Another feature of the Camera Club Exhibition is the evidence afforded of the growing and practical interest taken by amateurs in photo-mechanical process, examples of photogravure etched and printed by the exhibitor being included.

**PHOTOGRAPHY AND DECORATION.**—Mr. Rowland Briant spoke on this subject at the Conference. It is a new topic. He maintained that photography was capable of many decorative applications. Mutilation of natural forms was by no means necessary for decorative space filling. Photography could be applied to pattern making, and a new application of the kaleidoscope might be suggested to produce designs. This, Mr. Briant termed kaleido-photography, the patterns being repeated by suitable apparatus. Photography was generally called a full tone method; but it was easy on the one hand to lose outlines and gain broad designs, or on the other to make silhouettes and so get designs; in fact everything that is required, if we only know what we want. Nothing has been done because nothing has been tried. A large number of actual examples were shown at the Conference, including (1) monochrome re-

productions of pictures with original photographs from Nature, effectively applied to the decoration of panels and friezes; (2) decorative wood panels with the platinotype print direct upon the wood; (3) Diazotype or primuline prints on fabrics. (Messrs Cross and Bevan's method.) (4) other photographs on silk, linen, etc., as doilies, etc.; (5) transparencies for window decoration, leaded windows, etc.; (6) enamel and ceramic work; (7) photo-reliefs and sculptures; (8) engraving designs on copper; (9) embossing book covers; (10) wood carvings on photographic reliefs with contrivances for multiplying; (11) large posters and (12) book decoration by head pieces, tail pieces, initials and the like.

Amongst the examples were included some lantern illustrations from photo-micrographic slides produced by Mr. T. Charters White, showing fine decorative patterns of the most various descriptions, obtained by photographing suitably treated crystallizations of hippuric acid, bichromate of potash and other chemicals.

CHEMICAL CHANGES ATTENDING EXPOSURE AND DEVELOPMENT.—This was the subject of a paper by Professor H. E. Armstrong, F.R.S., who treated of Messrs. Hurter & Driffield's recent change of opinion, to which I referred fully in my notes last month. Mr. Armstrong in the course of his remarks held that the effect of fog in altering gradations is due, not so much to a greater deposit being formed on the lower gradations, as to the greater screening-effect exercised by the fog over the lower gradations. As to the use of ferrous-oxalate as a standard developer, he pointed out that there might, when ferric-oxalate was present, be a reducing action, and so comparisons with other developers could not fairly be made. As regards the comparative strengths of developers, he thought that more attention should be devoted to the amount and proportions of alkali used. It was not improbable that the differences claimed or observed with the many developing agents now on the market might be largely due to the different amounts of alkali rather than to the reducing agent. Lastly, he suggested whether what is commonly regarded as high sensitiveness to light may not, in some cases, really be a high sensitiveness to development.

On these topics another authority, Mr. Chapman Jones, points out that one plate may be less sensitive to daylight, but more sensitive to gas light than another, and so on. Daylight, again, is very varying in quality, and it is as impossible to express with exactness (much less *scientific* exactness,) the comparative sensitiveness of plates by a single number, as it would be futile to estimate a man's general appetite by weighing one of his dinners. The speed of a plate is never a definite quantity, and the adoption of any standard method or standard developer is held by Mr. Jones to be misleading.

**THE CORRECT RENDERING OF COLOR-VALUES BY PHOTOGRAPHY.**—This subject has been given fresh prominence here by the introduction of Messrs. Lumiere's series of color sensitive plates, and by the public competition in which Captain Abney acted as one of the judges ; and in order to bring up the matter Dr. Hall Edwards read a paper and showed results of a number of experiments prepared specially for the Conference. In the competition referred to, a chart of colors had been copied by the competitors, and the decision had been given upon photometric and not upon visual measurements. On this point some discussion took place. Objections, on the one hand, are taken to visual estimation of the comparative value of several colors, because no two observers absolutely agree, whilst on the other hand, objections are taken to the photometric measurements because they are different not only from one person's estimation, but are hopelessly at variance with every visual observer's reading.

Personally, I do not think, after all, it is so difficult to secure agreement amongst several persons estimating a set of colors visually. At first they are greatly disagreed as to the order in which the colors should be numbered as regards intensity, but this is due to the fact that people as a rule are so little accustomed to study colors relatively, and I have found that after a time, even after a few minutes' talk and experiment, a very fair general agreement is attainable even in respect of a chart consisting of colors having only slight differences of intensity. From either a practical or an artistic point of view such a competition should apparently be judged by the gradation of the photographic print as compared with the visual effect given by the colors.

**TELESCOPIC STAR IMAGES IN RELATION TO VISION AND PHOTOGRAPHY.**—A valuable paper was contributed to the Conference upon this subject by Mr. H. Dennis Taylor, one of the cleverest of our opticians here. The paper cannot well be summarized, but it may be said that it showed that the light of star-discs is very falsely rendered as to size and brightness in the photographs made by ordinary refracting telescope lenses, but that new combinations of lenses had been devised by which higher perfection in recording had been attained. Captain Abney (the chairman), again pointed out that the right measurement of the brightness of stars must be made from the density of the deposit in the photographic plate. He also described a new way of measuring star-disc magnitudes without a micrometer.

**TEMPERATURE AND EXPOSURE.**—This was the subject of the paper by the President himself—Captain Abney—who showed a number of diagrams displaying the results of experiments which proved that even within the limits of such temperature as are possible in England in winter and summer, there was considerable difference in the exposure required for a plate,

according to the varying heat and cold. This is particularly the case with slow plates, twice as much exposure being required with the same plates in our coldest winter weather as in our warmest summer temperatures. This applies to the temperature at the actual time of exposure, and the result is not affected by changes of temperature before or after the exposure, provided they be kept within the limits of causing fog. With collodion plates the difference would be more than four times. With rapid plates the difference is far less marked. At temperatures higher than 33 degrees Centigrade the gradation, as well as the rapidity of the plate, is altered; so that it is seen that the scientifically accurate estimate of the rapidity of a plate requires the inclusion of the temperature at the time of exposure as a factor. In the discussion, Mr. Cadett stated that Mr. Sterry had found that there was 20 per cent. difference in rapidity between a plate specially dry and one in an ordinarily moist condition, and Captain Abney said that absolute dryness diminishes the sensitiveness of the plate as far as concerns that part of the scale which registers what is called "useful exposure."

**INSTANTANEOUS PHOTO-MICROGRAPHY.**—The only other paper suitable for summarizing was one by Mr. Andrew Pringle, in which he described (and also exhibited) an apparatus devised for taking instantaneous photographs through the microscope, especially useful for watching and recording changes taking place at given intervals in bacteriological investigations.

**THE FIXING BATH.**—Upon this subject, Mr. Cadett, one of our leading plate manufacturers, maintains that no hypo bath should be stronger than 1 lb. to a quart of water, particularly with thickly coated plates.

Saturated solutions, although fixing thinly coated plates very quickly, will often quite fail to fix thickly coated plates. They are also liable to produce small blisters on the plate, quite apart from frilling. Treatment with acids before fixation also leads to trouble, and Mr. Cadett holds that the fixing bath should be preferably slightly alkaline, the color of the negative being controlled by the proportion of sulphite of soda in the developer.

**EXPLOSION OF COMPRESSED GAS.**—A fatal accident has recently occurred at one of our railway stations, caused by the explosion of a cylinder containing greatly compressed oxygen. This being the second catastrophe of the kind during the past year, something of a panic has set in amongst the users of these cylinders. As a matter of fact, considering the thousands of these cylinders in daily use, there is really no ground for as much fear as in the days of india-rubber gas bags. The cylinder in question does not appear to have been filled with gas under reasonable safeguards, but it seems very probable that one result will be a reduction in

the pressure at which these cylinders are charged. At present, as is well-known, they are charged up to 120 atmospheres pressure, or 1800 lbs. to the square inch. It is suggested that 90 atmospheres, or 1350 lbs. to the square inch should be adopted, or else very much larger and lighter cylinders used, in which the pressure need not be more than one pound per square inch. A pressure of 1800 lbs. per square inch, Mr. Chadwick points out, will perhaps be better understood when it is known that a locomotive engine works up to 120 pounds only.

CARBON PRINTS ON COLORED PAPER SUPPORTS.—Carbon printing is considerably on the increase, particularly amongst those whose aim in photography is chiefly artistic. My readers are already doubtless acquainted with the effective Artigue method, which, it is to be hoped, will be more fully exploited and developed. One of our workers here, Mr. G. H. James, in using the single transfer carbon process, has made very much of the artistic advantages to be gained by using various colored papers for the final support of the carbon image. In many instances, very good effect is gained by suiting the texture, tone and color of the paper support to the subject or quality of the image to be transferred to it. Mr. James, in some cases, has used a warm yellowish paper with rough surface texture for sunset pictures, and, for very low-toned effects, even brown papers. These latter, and other dark papers, have also been used with success in rendering nude studies, so as to obviate coarseness of texture or offensiveness of detail.

EQUALIZING THE ILLUMINATION OF PLATES.—The method devised by M. de la Crouée for equalizing the light all over the plate in the camera, was recently brought before the Royal Photographic Society. The invention consists of a V-shaped sector aperture cut in a sort of cap to the lens, the apex of the V coinciding with the axis of the lens. This V-shaped opening is made to revolve during exposure, and so permits less light to pass axially than at the margins. The *British Journal of Photography* points out that the method is very complex, and the necessity for any such correction very doubtful in practical work. If necessary at all, the older, simpler methods could be employed, one of these being Mr. R. H. Bow's use of a lens having a greenish or slightly non-actinic color. In such a lens, the glass being thickest at the center, the central rays are less easily transmitted than the marginal rays.

THE COLLINEAR LENS AND MR. DENNIS TAYLOR'S NEW SERIES IV. AND V.—Following upon the introduction of the Zeiss and Goerz anastigmat lenses, all my readers will be aware that Messrs. Voigtländer have introduced a lens with similar qualities, called the Collinear. It is claimed that this is constructed upon quite different principles from its predecessors, but no full description appears to have been published. In these notes



we are not so much concerned with technical construction as with practical uses. All these new lenses are undoubtedly great advances in respect of improved marginal definition and flatness of field obtainable with large apertures, but in conjunction with their great expense, their general use is prevented by the fact that most practical workers require such depth of definition, in all but a few cases, as would necessitate stopping down even these lenses to the same apertures as those at which existing doublets are employed. With the difficulty of expense removed, however, it is certain that such lenses will come at once into exclusive use, and our chief interest now centers on Mr. Dennis Taylor's simpler and cheaper systems of rapid simple triplets, in which the corrections are carried out by means of central negative lenses. Mr. Taylor, in his recent paper at the Camera Club, described two new series, one to work at  $\frac{F}{5.65}$  for universal purposes, and one for wide angle uses to work at  $\frac{F}{8}$ . In these triplets all cementing of surfaces by Canada balsam is done away with.



# Beginners' Column.

## CHAPTER XIX.—WET COLLODION. (CONTINUED.)

BY JOHN CLARKE.



Examining the negative finished according to the instructions in last chapter, it will, if all has gone well, be found sufficiently dense for most purposes, and should be full of delicate gradation; not only containing the five steps included between light and dark—light, half-light, middle tint, half-dark, and dark, but much beautiful blending of each of these into the other. While such a negative is capable of giving a perfect print on any or all of the ordinary printing papers, it may be that for certain process methods of printing, especially if it be a copy of a subject in line, a still greater degree of density is required. This, up to absolute opacity in the lights, is easily obtained by the following method of intensification, but as co-existent with opacity in the lights must be simply clear glass in the darks, some of the negatives may require a previous treatment.

Intensification being simply a building up on a foundation already laid, if, through pushing the development or any other cause, there should be a deposit however slight in the deeper shadows, or in any of them, if it be a subject in line, they should be cleared in the following way. Make a stock solution of iodine, 10 grains, potassium iodide, 30 grains, water an ounce, and to sufficient water to well cover the plate, add enough of the solution to make it the color of dark sherry. Pour this off and on several times, watching the effect, and as soon as the film has become yellowish or yellow, the extent of the action depending on the amount of fog to be removed, pour it off and rinse the plate under the tap or wash with a stream from a pitcher. This operation should be performed in the day-light, as in the yellow light of the dark room the yellowing of the film could not be easily observed. Now flow the fixing solution over the plate, pouring it off and on several times, and if the yellowing, that is the conversion of the silver deposit into silver iodide, has been sufficient, the lines, or deepest shadows will be simply bare glass, and the negative, after well washing, will be ready for intensification.

### INTENSIFYING SOLUTIONS.

#### No. I.

Sulphate of Copper.....	1 ounce.
Bromide of Potassium.....	5 drachms.
Water.....	10 ounces.

## No. 2.

Nitrate of Silver .....	1 drachm.
Citric Acid .....	$\frac{1}{2}$ "
Water .....	8 ounces.

The plate may be placed in a tray containing sufficient of No. 1 to cover it, and the tray gently rocked till the film is a creamy white through and through; then wash well and pour off and on No. 2 till the whole is completely blackened. A thorough washing completes the operation, which, if it has been properly conducted, will have given sufficient density for any purpose.

Instead of the acid silver nitrate solution, a solution consisting of ammonium of sulpho-hydrate, half an ounce, water, four ounces, or one of Schlippe's salt, one drachm, water, five ounces, may be employed, but the former must be used with caution, and the latter gives a cinnamon brown, instead of a black.

The beginner, even after he has acquired considerable experience, will find that the working of wet collodion is not the plain sailing, that, thanks to the platemakers, the modern dry plate method is. The bath may take an unaccountable freak and give only foggy, pinholey, or streaky plates, after being some time in use, and although there are various methods by which it may be doctored with good behaviour, the amateur had better confine himself to the following: Ascertain by measurement its exact quantity; add, say, twenty per cent. of distilled water, which will turn it milky by throwing out of solution the overplus of silver iodide, and filter. Then make it decided alkaline by adding sufficient sodium carbonate, and expose it to bright sunshine in a flat tray or evaporating dish. At the end of two or three days a black deposit will have been formed at the bottom of the dish, and the bulk will have been reduced below that at which it stood before the addition of the water. Add sufficient distilled water to bring it up to that bulk, filter, and add carefully just enough nitric acid to show an acid reaction, when it will be found to work as well as at first.

With very fresh collodion, that is, collodion too recently iodized, there may be a slight tendency to fog, especially when development is pushed, and perhaps a tendency to a too thin image. The addition of some that has become red from age, or if that is not at hand a small scale of iodine, so as to give it a deep straw color, will be a certain corrective.

Then again, some samples of collodion, otherwise good, refuse to adhere to the glass, breaking away in patches, or even floating off in an unbroken film from the plate, on the application, however gentle, of the stream of water employed to wash after the developing or fixing solu-

tions. The best cure for this, and it is always effectual, is a substratum, and the best substratum is diluted albumen.

ALBUMEN SUBSTRATUM.

The Albumen of a Large Egg.....  
 Water.....20 ounces.  
 Strong Ammonia..... 2 drachms.

Place the three in a bottle holding at least two pints, add a few small pieces of broken glass, shake thoroughly and filter. This will keep indefinitely, but should be again filtered before use.

After the plates have been cleaned as directed in last chapter the substratum may be applied in the same way as directed for collodion, but with large plates there is some difficulty in getting it to flow in an unbroken pool, and a tendency for it to run in *fingers and toes* across and off the plate. Some prefer to wet the plate with water before pouring on the substratum, but a very much better way is to pour some of the substratum into a cup, and with a soft flat brush, or small bunch of rags on the end of a stick by way of handle, to moisten the whole surface of the plate with it, and then pour on and off the substratum as directed. Any number of plates may be thus prepared, but there should be a suitable place provided in which they may be dried quite free from dust; and they should be stored in grooved boxes ready for use, the albuminized sides always placed one way, as when dry it is difficult to tell the coated from the uncoated side.

It may be well to say here that the collodion negative, whether wet or dry, must be more carefully handled than the modern gelatino-bromide negative. While the latter may, while wet, be freely swabbed with a tuft of cotton, or lightly rubbed with the points of the fingers, and when dry, printed from with impunity without protection of any kind so long as the paper is quite dry, the former in the wet state should never be touched with anything harder than a camel-hair brush, and that only with the gentlest touch, and when dry must always be varnished before printing from.

There are many good varnishes in the stock houses, but there are also many that are not good; some getting tacky in the heat of the sun, some of expansive power different from the collodion film, and so tearing it or being itself torn into reticulations, and some with other equally objectionable faults; so that I have always used something of my own making in which I had perfect confidence. The following, although involving a little trouble, is perfectly reliable, and I give the formula in tolerably large quantities, as it improves with age.

## PHOTOGRAPHIC VARNISH.

Gum Sandrac.....	6 ounces.
Canada Balsam.....	1 "
Copal Varnish.....	$\frac{1}{2}$ "
Oil of Lavender.....	$\frac{1}{4}$ "
Alcohol.....	40 "

Dissolve the sandrac in 15 ounces of the spirit, add the balsam and varnish and apply heat—stand the bottle on a folded newspaper on the top of the stove—till the solution is bright. Add the rest of the spirit and again heat till bright, and then add the oil. Set aside to settle, and decant or filter into suitable bottles.

To apply the varnish warm the plate over the stove or a lamp to a little above blood heat; pour the varnish on and off as in the case of collodion, and when it has ceased to drop hold it over the stove or lamp again till dry. After the varnish has acquired a certain age, and if the operation has been properly performed, the surface will be as glossy as the glass, and hard enough to stand the wear incident to the making of many thousands of prints from it.

For some purposes it is necessary to have the negatives reversed, that is, to be as they seem when examined with the film side next to the eye. Commercial process workers do this direct either by a prism or a mirror at a suitable angle in front of the lens, but both are expensive, and for the amateur at least, unnecessary, as with a little additional trouble, the end can be attained without them.

A method frequently adopted is to expose the plate through the glass; that is with the glass instead of the film side toward the lens. For this purpose the ordinary arrangement of the plate holder requires a slight alteration. As generally made, the plate is pressed against the silver wire or glass corners on which it rests by a spring in the center of the door; this must be removed and the required pressure obtained by springs placed as close as possible to top and bottom at the two sides. But there are objections to this method which make it desirable to adopt the more generally employed method of stripping the film from the glass, and either transferring it to another in reversed order, or keeping it as a flexible film which may be printed from either side.

Wet collodion negatives that are to be stripped should not be varnished, but when perfectly dry coated with rubber solution, applied in the same way as collodion. Suitable rubber solution may be found at most of the stock houses, or made be made by thinning the *rubber paste* sold by dealers in rubber articles with benzole, to about the consistence of collodion. When this is perfectly dry, the plate should be placed on a levelling stand, which also may be got at a stock dealer's, or in its absence an efficient substitute may be made by three screws—3 inch wood

screws say—and a board 6 inches square and an inch thick. The screws should be screwed into the board to the extent of a third or a fourth of their length, in the form of a triangle a little smaller than the smallest plate to be employed. With a plate laid on the heads of the screws and a spirit level, it is an easy matter by a turn or two to one or two of them to secure a perfect levelling stand, that is, so long as it is always employed on the same place of the same table or bench.

On such a beveling stand then, the negative is laid and covered with a warm solution of gelatine made as follows :

SOLUTION OF GELATINE FOR STRIPPING.

Gelatine.....	1 ounce.
Water.....	8 "

Place the gelatine in an evaporating basin or other suitable dish, and pour over it the water. Let it stand for an hour or two and then place the dish on the mouth of a saucepan containing boiling water, or apply heat in any suitable way till the gelatine is dissolved. Strain the solution through fine muslin, or through a tuft of absorbent cotton placed in neck of a funnel, and while still warm pour enough on the negative to cover it. Leave it till thoroughly set and then rear it up on edge in any convenient place where dust cannot reach it till perfectly dry, which may take from twenty-four to forty-eight hours, according to the hygrometric state of the air. When perfectly dry all that remains is to make a cut right through to the glass, about a quarter of an inch from the edges all round, insert the point of the knife under one corner, so as to raise the film, and then gently strip it from the glass:

I have generally employed Nelson's No. 1 photographic gelatine, and, made as above, found it to answer admirably, but with harder samples it may be necessary to add a little glycerine, say, a drachm to each four ounces of the solution.

No doubt the difficulties incident to the working of wet collodion are greater than those connected with the modern dry plate. The comparison may be something like that between the piano and the violin. To produce a note on the one you have only to strike a key and there it is, such as it is ; while the same tone or note can only be drawn from the other by the most accurate pressure of the finger on a certain part of the string, the one-thousandth part of an inch up or down making all the difference between purity and its absence in the tone. But what a difference between the possibilities of the two instruments !

Those very difficulties, or rather the overcoming of them, however, give a charm to the working of wet collodion that the photographer who knows it only by hearsay can never feel, and were there no other advan-

tage than that connected with it, I should still recommend all who could to become familiar with it.

As success depends on so much that is under the control of the operator, it may be well to add the following possible causes and probable remedies for a few of the most common troubles.

The plate, when it is removed from the bath, is mottled, especially towards the lower end and corner at which the surplus collodion was poured off; the mottling consisting of short irregular lines, a little thicker or more opaque than the rest of the surface. The plate was placed in the bath too soon after coating, and the film had not been sufficiently set.

The plate, on removal from the bath, is thinner, more translucent at the top or upper half than the lower. It had been allowed to remain too long between coating and putting into the bath, and the end opposite to that at which the collodion had been poured off had got so hard that the bath solution was unable to penetrate it.

There is towards the upper end of the plate, after development, a pretty large transparent patch, irregular in form, and which would print much darker than the rest of the negative. Instead of pouring on the developer with a *sweeping* motion, and at the same time letting it fall gently on the plate, it has been allowed to fall with considerable force and on one place, thus washing away from that place the free silver of which alone the image is formed.

The negative is covered, especially at the lower side, with white shell-like markings. A dirty holder, or too long time allowed to elapse between removal from the bath and exposure, or both.

Stains, mostly with an iridescent appearance between the film and the glass. The plate was not properly cleaned.

The plate is covered with a veil or fog. The bath is not sufficiently acid, or if it is, an addition of acid to the developer may effect a cure.

The developer, instead of flowing evenly across the film, is repelled, as if the latter were greasy, flowing in irregular lines. Add more alcohol to the developer.

Under and over exposure are indicated on wet collodion by the same symptoms as on the ordinary dry plates.



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## Editorial Comment.

*Frontispiece*, "On Summer Seas," by Sarony, of New York, can hardly be called an example of pictorial photography, as this term is generally applied. Although we do not advocate this kind of work as a general rule, this picture shows us what an artist like Sarony can do in combining technical photography with crayon work. Mr. Sarony's method of working is to get a good model, pose it in the studio, get a good negative of the same, and then make a platinum print of the latter. This print is used as the basis for work. The accessories are now drawn in with charcoal, the figure idealized or corrected if necessary, and in a short time Mr. Sarony has produced a picture. In this class of work he stands unrivalled the world over. We are indebted to Messrs. A. E. Chasmar, publishers of Sarony's Sketch Book, a monthly publication, for the privilege of reproducing this picture.

*Sizes of Lantern Slides.*—Our attention was called to the following item written by the editor of *Photography* lately, regarding the American sizes of slides. He says:

We have recently looked through some sets of American lantern slides, and have been struck with the apparent waste of size. The English standard size is, of course,  $3\frac{1}{4}$  in. square, and in the area of this it appears to be possible to get all sorts of pictures for lantern work—quite as full a variety and as comprehensive in scope as that produced by transatlantic workers. We should judge the standard size in use there to be  $4 \times 3\frac{1}{4}$  in., but as we found the pictures varied from  $2\frac{1}{2}$  to



2½ in., we cannot quite see why lantern plates of so large a size are required. The largest sized picture we refer to could easily have been reduced ¾ in. with great advantage, so that any of these slides could have been included on a plate of English standard size, but it is too much to hope that our friends will join us in making the use of that standard general. The additional weight of the larger size is a consideration, as well as extra cost in connection with all fittings which come into use with it, and, so far as we can see, there is no gain whatever in using the larger size.

In this criticism it is interesting to note there is no mention of a needed uniformity in the labeling and marking of slides, which is one of the points we Americans insist upon. The standard size of the mat opening is as is stated, 2½, or 2⅞ inches generally. Slides intended for use in double lanterns should have the mat openings exactly the same, hence it is necessary to establish a size for the largest opening as a standard, which may be reduced according to circumstances, as may be needed to show the subject to the best advantage. The plea is that the largest standard opening for the mat might just as well be reduced a little, without hurting the picture, which would then make it fit the 3¼ inch square plate to better advantage; that is, the general and accepted standard can be changed just to suit this particular sized plate.

We do not see the force of such reasoning. Our idea is, taking one size of opening as a standard, use a plate which will harmonize with that. If a mat having an opening 2⅞ inches square is used on a 3¼ inch square plate, there will be a margin of scarcely a quarter of an inch around the opening on which to put labels or thumb marks. The value of any slide is greatly enhanced by having some interesting title or descriptive matter upon it. There is no room for it on the English size, unless it is written in white ink on the black mat in a circle around the mat opening, and this has to be done in a fine hand at that. Then two thumb labels have to be put on one side of the cover glass in order to distinguish which is the bottom and top of the slide. To the average lecturer or lantern worker the need of twisting a slide around in order to read the title and examining it carefully before putting in the lantern is very disagreeable where rapid changing of slides is necessary. The American, French, and the standard of most other countries, 3¼ x 4 inches—an abbreviation of the old 3¼ x 4¼ plate—not only supplies room enough for a standard mat opening, and space for title and particulars either on the mat or outside labels on the cover glass, but also has the advantage by one side being longer than the other, of enabling a person quickly to determine which is the bottom or top, or to know which way the plate should be put into the lantern carrier. We notice the Committee on Standards of the Philadelphia Photographic Society have suggested that the largest standard size of mat opening for a slide be 2⅞ inches one way by 2 inches the other way, as it harmonizes with the sizes

of most dry plate negatives. We doubt the wisdom of departing from the  $2\frac{7}{8}$  inch square size.

By placing the descriptive matter on the right hand end of the cover glass and the thumb label at the lower left hand corner of the same there can be no mistake in feeding slides into a carrier; the movement is perfectly natural, since in grasping the slide at the thumb label corner, with the thumb over the label, the descriptive label at the other end is readily examined, and a half-twist of the right hand to the left puts the slide into its proper vertical position to be pushed into the carrier, or to be dropped into a pocket carrier if such is used. As a general rule, the English slides that have been sent to the United States are of much thicker glass than is used here, so that we think a standard American  $3\frac{1}{4}$  x 4 thin glass slide will weigh no more than the standard English  $3\frac{1}{4}$  x  $3\frac{1}{4}$  size. Thick glass is always less expensive than thin, and we doubt whether the difference in cost in England would exceed a cent between the  $3\frac{1}{4}$  and the  $3\frac{1}{4}$  x 4 size.

Such items count but little with Americans, who prefer uniformity and convenience in labeling, to the hap-hazard method used in England. We believe a majority of the foreign countries use the  $3\frac{1}{4}$  x 4 size, and there is every reason in favor of it becoming the general standard. Our contemporary is right in asserting that it is too much to hope that our American friends will join us in making the English standard the general one. There are certain to be two standards as long as the plate makers supply the plates. The American Lantern Slide Interchange, representing the largest societies in the United States, adopted the  $3\frac{1}{4}$  x 4 size some years ago, and is promoting it as a standard among all the other organizations. Uniformity in size and labeling are its cardinal points, and there is not a society or individual who does not appreciate the value of such a standard.

#### LIMITATIONS OF PICTORIAL PHOTOGRAPHY.

[Extract from a private letter to our editor.]

YONKERS, April 16th, 1895.

MY DEAR MR. STIEGLITZ :

I cannot close without remarking about that interesting letter from your friend in Paris in reference to our pictures at the Salon.

His letter does not surprise me, for except in a few instances he sees the limitation of our art. The work of the men he cites pleased him because the subjects were capable of a fairly satisfactory interpretation with the camera.

I think every clear head and thoughtful worker in pictorial photography realizes the limitations of his art when he sees how very, very few pictures he has that are successful interpretations of the light, shade, form and color of the subject depicted.

I consider the letter all the more valuable because your friend saw some work worthy of praise.

Yours sincerely,

R. EICKEMEYER, JR.

## MEMBERS' EXHIBITION OF PHOTOGRAPHS.

## NEW YORK CAMERA CLUB.

The rooms of the New York Camera Club were thrown open to the public, April 15th for a view of an exhibition of photographs by members of the club, arranged by a committee consisting of Messrs. Richard H. Lawrence, Chairman, Franklin Harper, W. D. Murphy, W. B. Post and J. M. B. Hard. Twenty-one exhibitors sent 155 prints, enough to fill the walls without crowding them, so that most of the pictures could be viewed to their best advantage as far as the hanging was concerned. Not as much could be said for the lighting, which was very unfavorable, and probably many of the prints would have shown up better if this defect could have been remedied.

Taken as a whole, the exhibition was very disappointing. The club contains a number of good workers, and what some of them have shown in the past led to the expectation that a better showing would be made. But it seems that the majority of the members of this club, as of others in America, are of the variety described by "John Bull, Jr.," in the last number of this magazine, who "having mastered the art of making a perfect negative and from that a perfect positive, feels that he has learned all that is necessary and goes on making perfect negatives and perfect positives of everything and anything that comes in his way." Technically there is little to be criticised in the prints shown; they were of a very high standard. But to those who have followed the course of artistic photography abroad, as shown at exhibitions and in the illustrations of the photographic magazines and annuals, and who believe in the ability of the American workers to do as well as the foreign, the exhibition must have been a bitter disappointment.

Far and away the best exhibit on the walls was that of Mr. W. B. Post, one of the few workers who have maintained the standard of American photography abroad. Mr. Post's range is a large one, embracing *genre* and figure work, summer and winter landscape and marines, but he unquestionably excels in landscape and marine. Much of the work shown has been seen elsewhere, but there are also a number of prints which are not known. No. 73, "End of a Winter's Day," is a finely rendered snow scene, reminding somewhat in its shape and the placing of the horizon of Mr. Eickmeyer's "Sweet Home," but presenting a number of vital differences in treatment. No. 78, "Misty Day on the Saco," renders the haze of a midsummer afternoon beautifully; the bank in the right foreground is too heavy, throwing the other too far back; if this is covered the result will be more truthful and harmonious, and the picture will rank high in the gallery of Mr. Post's achievements. No. 88, "Picnic Coffee," is trivial and faulty in composition, and although aware of the fact that it has been medalled in a recent competition, we are of the opinion that is unworthy of its author.

Miss Mary E. Martin's four prints, Nos. 69-72, show a marked retrogression as compared with former work. The sheep studies shown some years ago warranted the belief that she would become a rival of Misses Clarkson and Farnsworth, but neither of these ladies has ever been guilty of such common-place work as the four prints shown. Dr. Geo. Trowbridge's carbon enlargement, "His Initials," while full of faults, is promising. The figure is well placed and the scene well chosen, but the focussing is too uniformly sharp. The result is not only that the beholder is confused by the mass of detail which is brought out with indiscriminate

emphasis, but an entire loss of aerial perspective, without which there is no truth and no beauty.

Mr. Richard H. Lawrence is another good worker gone wrong; his architectural studies shown at the First Members' Exhibition of the Society for Amateur Photographers were excellent, while the four large platinotypes shown here are weak attempts at picture photography, and are not even up to the standard of technical excellence. Children are difficult subjects to photograph always, and when posed to form part of a picture are apt to look more or less conscious; rather more than less, and the children in Mr. Lawrence's photographs have certainly not shown themselves to be exceptions.

Messrs. Fraser & Cassard have apparently been inspired by the work of photographers who are obliged to cater to the wants of their patrons. Their portraits are conventional "likenesses," and where pictorial effect seems to have been striven for, trivial in sentiment. Both gentlemen show to better advantage when they leave the field of portraiture; Mr. Fraser's "Easter Lilies" is very pleasing, and Mr. Cassard's still life, "Teal Ducks," is a superb example of carbon printing.

Dr. Huntington's portrait work stands on a much higher plane, although very uneven. No. 9, "Portrait of the Rev. W. R. Huntington, D. D.," is the best, and is very good. Fault can be found with the heaviness of the shadows in the face; they should show more modelling. No. 13, "Girl Spinning in an Attic," a red carbon print in the manner of the old Dutch masters, is good in composition, but the flatness of the lighting spoils it. Mr. Frederic Bruce showed four bromide enlargements. Of these, No. 104, "Dolce Acqua," is a splendid view of an Italian village at the base of abrupt cliffs crowned by a castle, which is unfortunately marred by the presence of a quantity of linen hanging to dry over the balustrade of a bold, arched bridge. A very few "soldi" properly applied would have secured its absence. No. 106, "On the Nile," a party of men crossing the river at dusk, deserved a better place than the dark corner in which it was hung. Mrs. Lounsbury's work shows a distressing absence of individuality in a worker who has the ability to do better, as is proved by No. 66, "Portrait of Cazin," a plain silver print of much beauty.

A notice of the exhibition would be incomplete which failed to mention Mr. Samuel B. Bridgman's frame of "Lightning" studies, which are better than anything in this branch of photography which the writer has ever seen.

JOS. OBERMEYER.

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## ANNUAL EXHIBITION OF THE BOSTON CAMERA CLUB.

BY B. A. C.

The Seventh Annual Competitive Exhibition of the Boston Camera Club, for members only, was held in the club's gallery, No. 50 Bromfield street, Boston, April 3d to 20th inclusive. Taken as a whole, the display was extremely creditable in point of artistic character and technical quality, but it did not represent the utmost the club is capable of doing, as such accomplished artists as Miss Clara E. Sears, Mr. J. H. Little, Mr. George H. Eaton, Mr. D. W. Lewis, Mr. W. S. Briggs and Mr. G. M. Morgan were not included in the list of exhibitors, and Messrs. Andrews, Kimball, Lee, Chase, Cockayne and Eames were by no means seen at their best. On the other hand, the pictures of Mrs. Sewell and Miss Richards, who have joined

the club but recently, were among the most attractive in the entire collection. The absence of many fine pictures was doubtless also due to the limited accommodations of the club's quarters, as only one hundred and eighty could conveniently be shown, and this number was selected from over three hundred photographs submitted. While there was much to admire in nearly every exhibit, there was, with few exceptions, cause for much disappointment, and that was the absence of thoroughly cultivated taste and the comprehension of those principles upon which all art is founded. To artistic arrangement, in *genre* or landscape, according to well-known rules of composition, must be joined such important qualities as harmony, grace, unity, balance, the proper distribution of light, and, above all, there must be the *raison d'être*, then we have—or ought to have—BEAUTY! There was no marked tendency to depart from the usual methods of clear definition, except in the *genre* subjects of Miss Eddy's, which were delightful, and a portrait of Mr. Kimball's, representing a gentleman in quasi-medieval costume, which was most superb, and, but for the unfortunately conspicuous pose of the right hand, was fairly entitled to the award granted Mr. Chapman.

It is well understood that several of the leading members of the Boston Camera Club devoted to portraiture, scorn the methods of lighting and posing employed by good professional photographers, and strive for marked individuality and breadth of treatment. All this is very praiseworthy, but, as little advance in the direction of artistic independence has been shown, would it not be well first to demonstrate the ability to master the subtle art of lighting the human face, producing, and by skilful chemical manipulation, retaining what professional artists prize so highly, viz., "modeling," before depreciating this most valuable feature of successful portraiture? Then, too, it is rather late in the day for such purists to indulge in "chalky" portraits, in which no difference whatever is made between the flesh-tints and the shirt collar or white drapery. Yet the majority of the portraits shown were thus defective, and to all ambitious amateur portrait photographers we commend the study of the human countenance, and the contemplation of portraits by such celebrated professionals as Gutekunst, Kurtz, Sarony, Rocher and Morrison, who have arrived at their extraordinary proficiency only after many years of careful training. And yet the amateur has advantages over his professional brother, in that he photographs only what he chooses, suiting his own taste and convenience, and very frequently the question of expense attending his endeavors is not considered. In many instances, too, the amateur is a person of refined and cultivated tastes, and is familiar with the inspiring works of the great painters by reason of travels in Europe, of which pleasant and educating experience but very few professional photographers can boast. So there are many reasons why the productions of the cultivated amateur photographer should in every respect be more artistic. This, it is pleasant to record, is true of the ten pictures contributed by Mrs. Arthur Sewall, who captured the award for the exhibit of the greatest general excellence. Her landscapes, in which figures are most appropriately introduced, possess among other pleasing traits the rare quality of atmosphere, and her rendition of perspective is delightfully true. Her snow scene (January in New England) was, with Mr. G. H. Chickering's "Brush Hill Road," the best of its class in the room. In "St. Francis Holding the Babe," Miss Sarah Eddy shows that she has studied the Old Masters most profitably, and has here produced a gem of the first water. It is fresh in originality, delicate and tender in treatment, and beautiful and flawless in execution. It was copyrighted in 1894. Mr. J. Prince Loud's five landscapes were excellently done.

and evinced the highest artistic expression. His picture, entitled "A Gathering Storm," (a gloomy bit of landscape beneath a heavily clouded sky) was too conventional to merit the diploma "for the picture having the most artistic sentiment," in competition with Miss Eddy's "St. Francis." The diploma for the best study in "Home Portraiture," was accorded to Dr. and Mrs. O. W. Huntington, for a large profile of a lady, which was not nearly so meritorious as their No. 76, a portrait of Dr. W. R. Huntington, the difficulties overcome in producing the latter being apparently greater. No. 72, a girl gracefully posed near a large spinning-wheel, by the same artists, was charming, and elicited the warmest admiration. It received special mention. The award for the best figure composition went to the youthful Mr. T. I. Chapman for No. 20, a portrait of an old lady in dark attire. The picture possessed much merit, but was marred by the left hand, placed conspicuously forward and away from the body, and so strongly lighted as to detract from the principal point of interest—the face. It requires something of a knack to arrange the hands and accessories harmoniously, for everything must be subservient to the main idea. Mr. Wilfred A. French was represented by five landscapes without figures, executed in such a manner as to gain for him the only award for technical excellence. This decision must have been made also in recognition of his careful attention to composition, for nearly every exhibit in the room was technically good. The diploma for the best portrait went to Mr. C. E. Lord, a new member, for a clearly executed half-length portrait of a handsome woman, conventionally posed and lighted, but evidently made with a view lens, as there was no trace of roundness or perspective, the entire figure and the chair behind it being, apparently, *in one plane*. Nowadays no amateur can be said to have successfully mastered all the technical difficulties in photography, unless he is familiar with the use of a *portrait lens*; not the ordinary symmetrical combination, which is equally serviceable for studio work and landscapes, but the shorter-focus instrument with tremendous illuminating power, exclusively designed for portraits. Such a lens requires some experience to employ successfully, but then the results are much inferior in every way to those obtained with the regular symmetrical type, or even a good group lens. Mr. O. A. Eames, whose "Evening" (a sail boat set against a dark shore and a cloud covered sky) elicited special mention, appeared to excellent advantage, his six *genre* and marine studies being executed in his best artistic manner. Mr. H. A. Latimer contributed three carbon enlargements of extraordinary beauty and technical perfection, than which none finer have ever been seen in Boston, but as he made *only* the negatives, he was not "remembered" by the judges. Among the printing papers platinotype easily led, two-thirds of the exhibits being printed on this favorite paper, while the rest was divided among plain salted, albumen and aristo-platino papers. The judges were Mr. Wm. H. Downes, a professional art critic, and Mr. D. B. Vickery, the veteran portrait photographer, both gentlemen having had the satisfaction to officiate at the first competitive exhibition of the Boston Camera Club, where the awards were made with the utmost fairness and without a suspicion of favoritism. Each picture submitted bore no mark indicating the competitor's identity, but on the back an assumed name was placed, duplicated on the outside of a sealed envelope containing the individual's name and the titles of the pictures sent. The judges even selected the pictures to be exhibited for competition, thus assuming the entire responsibility except the hanging, which, too, was highly satisfactory. The whole exhibition was skilfully managed by Mr. J. Prince Loud, Second Vice-President of the club, who also prepared the handsome and capitally arranged catalogue.

## Society News.

**"The Fraternity of the Red Lamp of the Hotchkiss School"** (Lakeville, Conn.) is the name of a new club of juvenile photographers. The faculty of the school have put in a well-appointed dark room for the use of the boys, and, with a good place to work in, a considerable number have become deeply interested. A lantern exhibition on "Lakeville and the Surrounding Country" is in active preparation, and some remarkably good slides have already been made by interested members. We are glad to see that the faculty of the school have taken this step in favor of photography, and feel sure that they will be abundantly repaid by thus furnishing the boys with means for good, wholesome and profitable amusement. Their example should be copied by other schools of the country.

The faculty, in providing such excellent facilities for the practice of photography by the boys, have not only popularized the art in the school, which should redound to its advantage, but have also set an example to other schools throughout the country worthy of general imitation.

**Society of Amateur Photographers.**—*Exhibition of Baby Photographs.* A novel exhibition of baby photographs was held April 3d to the 6th in the exhibition hall of the Society, by the Home of the Messiah, for the benefit of the little ones, and was presided over by Mrs. J. Wells Champney. A large variety of baby pictures were shown, said to be nearly a thousand in all. Something like \$600 was cleared for the charity.

*Annual Meeting, Tuesday Evening, April 9, 1895.*—The meeting was called to order by President R. A. B. Dayton, shortly before 8:30 P. M. The minutes of the meeting of March were approved, then the roll was called and disclosed the fact that more than a quorum was present. The reports of the officers were next read, the President coming first. Some of the points mentioned were that the past year, 1894 to 1895, had been one of great activity for this Society. It fell to the lot of the Society to give the first and the last of the so-called joint exhibitions, in common with the Boston and Philadelphia societies. The last exhibition, held in New York in April, 1894, was a distinct advance over others, it being the first time the weeding-out process was undertaken by a special preliminary joint committee. The quality of work was most excellent, and there was a larger attendance than at previous exhibitions. Financially the Society came out ahead by \$132.12, if all the advertisements are realized from, as it is expected they will be.

The Boston Club voted to withdraw from the plan of joint exhibitions: Philadelphia followed suit, so that the arrangement begun in 1887 is now at an end. But the fact of the dissolution should not and need not prevent this Society from giving bi or tri-yearly public international exhibitions in the future. The exhibitions have a good influence in placing before the public the latest advances in the art of photography. This was shown particularly in the exhibition of mechanical photo-printing processes, held in the rooms of the Society in December, 1894, when the examples of the tri-color process printing attracted so much attention. The exhibition was given at a most opportune time. The Members' Exhibition, held in March of this year, was largely attended, proving that the idea of exhibitions for the display of new work is popular and attractive. The exhibition of "baby photographs," held for the benefit of a charity, early this month, was very novel in its idea, and resulted profitably to the charity. There is no reason

why the Society should confine itself strictly to the exhibition of artistic work; there are many other subjects capable of display, and exhibitions of photographs illustrative of different branches of photography, it seems to me, should be held. During the past year not very much improvement in the art has been made. New things cease to be as attractive as formerly. The publication of the Society's journal has been continued. Altogether the Society has held its own fairly well during the year.

Treasurer C. C. Roumage then read his report. Beginning with a balance on hand April 1, 1894, of \$22.89 there had been received as ordinary receipts, \$3,665.65, including dues from active, subscribing and corresponding members, \$3,034, initiation fees, \$270, and locker rentals of \$350. Special or extraordinary receipts included a loan of \$300, \$75.55 realized from the auction sale, smoking concerts, \$12.43, and \$92 from joint exhibition committee. The ordinary expenses were in gross, \$3,988.27 (nearly \$4,000), and include rent, \$2,000, electric light, \$441.73, (estimated to be \$100 higher than it would have been had no exhibitions been given); improvements, \$124.18, printing of the society's journal, \$222, payment of a loan, \$115; the remaining items covered salary of the custodian, printing, committee, sundries, etc. The indebtedness in regard to loans to the society was increased \$200, so that there was now \$600 owing, but all the bills for running expenses, etc., were paid up in full to date.

The Recording Secretary, Mr. Alfred P. Schoen, read his report regarding the status of the membership of the society. There had been fifteen new active members elected, but the losses by resignations and deaths had exceeded this number by eleven. On April 1, 1895, the membership, outside of honorary members, was as follows: Active, 129; subscribing, 42; corresponding, 32; total, 203. The hard times was assigned as one of the reasons for loss of membership.

The Corresponding Secretary made no report.

All of the foregoing reports were accepted and ordered placed on file.

The Recording Secretary reported the receipt of a pamphlet on the Stereoscope, by Prof. Charles Himes. The next matter of interest was the election of officers and directors for the ensuing year. The report of the Nominating Committee was called for and read by Mr. Charles Simpson, the chairman; it was signed also by W. H. Hapgood, H. A. Smith and F. C. Beach, active members of the Society not members of the Board of Directors, and nominated the following ticket: President, C. C. Roumage; Vice-President, Dr. J. H. Stebbins, Jr.; Recording Secretary, R. L. Bracklow; Corresponding Secretary, T. J. Burton; Treasurer, W. E. Johnson. Directors: Dr. J. T. Nagle, E. T. Birdsall, Albert Stetson, Louis T. Brush, C. W. Canfield, Harry Coutant, G. F. Bassett, Frank M. Hale.

On motion of Mr. F. C. Beach, to which there was no objection, it was unanimously voted that the Secretary be authorized to cast one ballot for the whole ticket; he did so and the chair declared the forgoing persons named in the ticket elected. In retiring, Mr. Dayton alluded very appropriately to the kind treatment he had received from the Society during his term of office.

The new President, Mr. C. C. Roumage, then took the chair, and among other things said that he sincerely thanked the Society for conferring upon him the office of President, asked for the hearty co-operation of every one, and if anybody had complaints or were dissatisfied, he wanted them to do their kicking right here, and not wait till they reached the sidewalk. He had always taken a lively interest in the affairs of the Society. The Society was formed with photography as a basis,



and should encourage that as much as possible. It was not a social organization, and should not be operated as such. We had a comfortable home for our members and all were welcome to get all the enjoyment out of it that they could. Convenient facilities for photographic work are provided, which are open to the use of members of out of town societies. He alluded to the prevailing use of photography by the newspapers; it was an indispensable part of their equipment. We have several students in different branches of photography who devote an immense amount of time to it. Our members are enthusiastic for photography. He again thanked the Society for the honor bestowed upon him. Mr. R. M. Bracklow, the new Recording Secretary, took the place of Mr. A. P. Shoen and thanked the Society for his election. Mr. Wm. M. Murray spoke of the valuable services of Mr. R. A. B. Dayton to the Society as its President during the past three years, how successfully he had managed the last joint exhibition, and of his uniform courtesy to everybody; he offered a special vote of thanks to Mr. Dayton, which was unanimously carried.

The medals were then presented to the successful members winning them in the recent Members' Exhibition.

Mr. Wm. Geo. Oppenheim said a few words complimentary to the work of Mr. Dayton. Mr. Alfred Simpson offered a vote of thanks to all of the retiring officers and directors, which was amended by Mr. Oppenheim to include a special vote to Mr. T. J. Burton. It was carried unanimously.

The scientific business of the meeting was then taken up. The Chairman of the Committee on Science and Art, Dr. John H. Janeway, being absent, Mr. F. C. Beach presented for him two papers, one on "Photography by Gas Light," which was a continuation of the history of photography by artificial illumination, and another on "The Acetylene Light—A New Light." The former was presented by title, but the latter Mr. Beach read.

He supplemented the statements made in the paper by remarking that it was a curiosity in the way of a light, and at the next meeting he would endeavor to show it in actual use. By simply dropping a small quantity of the prepared chemical compound in water, gas is at once evolved, and will burn with a pure white light.

Mr. Moses Joy, Jr., thought that the cost was at present against it—he could not purchase it for less than twenty-five cents per pound. It was expected, should it be economically produced, that it would be sold for two cents a pound.

Mr. Beach then exhibited several pieces of new apparatus; first, an improved tray rocking machine, the invention of Mr. Joseph Hess, of Mifflentown, Pa. As will be noticed in the accompanying illustration, it consists essentially of a lower pivoted platform enclosed in a rigid frame, a connecting bar running from one side of the platform to the large iron driving wheel. A special thumb screw is provided where the bar connects with wheel, whereby the end of the bar may be moved close to or away from the exact center of the wheel. This controls the amount of oscillation of the platform, according as the eccentric movement of the end of the bar is greater or less. Rising from the four corners of the lower platform are iron uprights six inches long, on which rests a secondary removable slatted platform, so that it is a double-decked affair. A tray may be placed on each platform, as is shown. The propelling device consists of a small water motor, which is readily attached by rubber hose to a faucet, the waste water being used for washing plates, if desired. From the pulley of the motor a small cord runs to the large grooved driving wheel. Very little power is required, and when the electric current is to be had readily, a small electric motor will answer as well. Mr. Hess has found it very

convenient and effective. Pach Bros., in New York, have used one in their large establishment with success. Mr. Hess says: "I hope it may take with the amateurs, as it was through that kind of work that led me to get up the machine, and it proved such a good thing for me that, after six months' work with it, I decided to protect it with a patent and put it on the market."

It is generally concluded that unless plates are rocked during development, the negatives will be liable to have a mottled appearance. Prints, especially the kind liable to curl on the edges, are easily washed by the rocking motion of this machine.

Mr. Beach also exhibited a new lens, manufactured by Voigtlander & Sons, of Vienna, sent to him by Benjamin French & Co., of Boston, Mass., and an 11 x 14 print made from a negative with this lens. The lens is a No. 6 Collinear, a sort of triple anastigmat, wide angle, yet rectilinear, and is said to be strictly symmetrical, giving an even anastigmat field, with remarkable illuminating power and producing pictures of equal sharpness, with a large opening. Each combination is composed of three separate lenses, made of the Jena glass, representing three different qualities of the glass, with varying, refracting indices. It is expensive, costing \$117, but it

will cover with a stop as large as  $\frac{f}{11}$  an 11 x 14 plate, and with a smaller stop,  $\frac{f}{36}$  as

large a plate as 16 x 20. The lens is fitted with an iris diaphragm, and as it is almost solid with glass inside, the tube is quite weighty. But it was very finely made. The print represented a group of 18 figures on an 11 x 14 plate. They were distributed over a space 15 feet long, yet the lens was but 12 feet away; the exposure was but 5 seconds, 3:30 in the afternoon on a December day, and weather was cloudy at that. The opinion seemed to be that it was a very rapid lens to do so much, and yet have the images all clear and distinct in the different planes. It is said to be a valuable lens for color photography.

He next exhibited an example of the newly patented well-known Goerz lens, sent by Mr. W. Goerz, manager of the New York branch in Union square, No. 54 East, which was intended to cover a  $6\frac{1}{2} \times 8\frac{1}{2}$  plate perfectly, with largest stop, and was  $9\frac{1}{2}$  inches focus.

The lens, like the Collinear, was very weighty for its size, being almost of solid glass and brass work; had the usual iris diaphragm with stops marked on the ring. Mr. Beach exhibited two 8 x 10 negatives for comparison, which he had made each with a shutter exposure of the same duration, and had developed the same length of time on Cramer crown plates, using the metol and potash developer. The exposures were made at noon, with the light of uniform strength and within ten

minutes of each other. One was with the Goerz lens, full aperture, or  $\frac{f}{7}$ ; the other using an  $11\frac{1}{2}$  inch focus, Voigtlander, series V1., No. 1 A, full aperture or  $\frac{f}{8}$ .

Although the Goerz lens was only intended for a  $6\frac{1}{2} \times 8\frac{1}{2}$  plate, its definition on an 8 x 10 was quite remarkable, being quite sharp to the edges in the different planes, from forty feet to infinity. It was more rapid than the Voigtlander, as was shown by greater deposit on the plate in the shadows and dark portions of the picture. The shorter focus and use of Jena glass may partly account for this. There was also a larger field included in the Goerz negative, as might be expected, but it was free from the distortion likely to be seen in wide angle lenses.

The results, Mr. Beach thought, showed the Goerz lens to be an improvement, and to sustain the claim of better definition at full aperture than it is customary to find. Whether such an advantage is worth the high price of the lenses is a question which each photographer must decide for himself. This lens is quoted at \$70. It is safe to predict that for shutter work or hand cameras such a lens is invaluable, since the illumination, field of view and definition are very complete and perfect. Comparative test charts were shown to illustrate the difference between the definition of this lens and others at full aperture. In making this comparative trial Mr. Beach ascertained that the difference in general merit as regards brilliancy, stereoscopic effect and rapidity was slight, the well-known Voigtlander holding its own, and may still be regarded as a standard lens, which in this age of rapid plates is a very useful agency in the hands of any photographer for the production of fine work.

He next exhibited models of the improved Bull's Eye cameras sent by the Boston Camera Company, showing recent improvements. One was a 4 x 5 camera (see Fig. 1), which shows the general appearance. On the top near the front is a focusing screw wheel with the feet marked in inches on the periphery; there are the usual finders and the non-actinic window on the back to tell when enough film has been wound off. Fig. 2 shows the improved sides, hinged, which open when the camera is loaded and unloaded with the roll of film. The prepared roll or cartridge of film, enveloped in black paper, is dropped into a pocket near the front, after the side is opened, and is carried back over the rear of the camera to the other pocket near the front and the end fastened to the winding-up spool. The two sides are then closed and the back put on, making the camera ready for use. When it is desired to substitute a glass plate for film a frame in the rear is removed, which allows the plate holder to fit in place, the sides of the camera being held closed. Fig. 3 shows the style of plate holder and the form of the smaller camera.

It will be noticed that the old idea of sliding one part of the camera, telescopic fashion, within the other is done away with, and the sides of the outer case, formerly rigid, are now hinged, thus saving weight and space. The danger of having more joints than formerly where light might enter the camera, is overcome somewhat by the use of a strip of black guard paper on the back of the film.

The shutter is easily operated, as formerly, by the pressure of the finger on a lever from one side to the other. These cameras have become quite popular within the past year or so because of their compactness, simplicity and ease of working. They are neatly finished in black leather, and have no projecting external parts to attract attention. Then again, the fact that they can be conveniently loaded and unloaded in an ordinary room is a feature very seductive to the ordinary tourist desiring to preserve mementoes of his trip. Photographs made with the camera were exhibited. Mr. Beach was accorded a vote of thanks for exhibiting the various pieces of apparatus.

Mr. August Dundelius, of Port Jervis, N. Y., being present, was invited to exhibit and explain his new magazine camera, recently patented. He claimed that it was one of the simplest, lightest, plainest and most complete magazine cameras made. It appears to be a modified or simplified form of the Hetherington magazine camera. Referring to the accompanying illustration, the small upper left hand black disk is the device for changing the plates after exposure, or for turning down from a vertical to a horizontal position the exposed plate, the remaining plates being pushed forward by a spring from behind. The finders are observed on the front, and below on the side is the round focussing device. Below this is the black release

## **THE AMERICAN AMATEUR PHOTOGRAPHER.**

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C. C. ROUMAGE,  
President of the Society of Amateur Photographers.  
(See page 227.)

THE HESS TRAY ROCKING MACHINE.  
(See page 228.)

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## THE AMERICAN AMATEUR PHOTOGRAPHER.

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FIG. 1. IMPROVED BULL'S-EYE CAMERA.  
(See page 230.)



FIG. 2. IMPROVED BULL'S-EYE CAMERA.  
(See page 230.)

FIG. 3. PLATE HOLDER ATTACHMENT  
BULL'S-EYE CAMERA.  
(See page 230.)

THE LUNDELL'S MAGAZINE HAND CAMERA.  
(See page 230.)

button for letting off the shutter. There is also a special button on top for making time exposures. On the front is a small button for regulating from the outside the size of the diaphragm. The shutter is a rotating disk having diametrically opposite apertures, which pass in front of the lens, and are checked by stops on the face of the disk coming in contact with the button release lever. It is so arranged that the shutter only goes off when the pressure on the button is released, preventing any jar. Attached to the axis of the shutter is a coiled flat steel spring like a clock spring, held taut by a ratchet wheel. The camera is loaded by turning the hinged back up and inserting the plates held in carriers over each other. Before inserting the plates, the shutter spring is wound up by reaching the hand through the back of the camera and turning a small crank with the fingers to the right. Flat springs are attached to the inside of the sides of the camera, which hold the exposed plates in the bottom and ease their downward movement when a plate is changed. The camera is quite neat and compact in appearance, and judging from the specimen prints exhibited, is quite a practical and convenient instrument for hand camera work. The meeting then adjourned.

*Special Lantern Slide Exhibition, Tuesday Evening, April 16th.* "Norway, the Land of the Midnight Sun," was the subject illustrated by one hundred and forty new slides made by Mr. Charles Simpson. Mr. Wm. M. Murray presided at the screen and explained the views. By a map the routes taken in two different years were described, the southern half of Norway being traversed first and the upper half covered by the second tour. Norway is a favorite place for Englishmen, and photographs of their mountain hotels, and the way tourists travel were shown. The Norway mail cart and pony, the grand scenery in the Fjords, lakes and glaciers, the curious customs of the natives in sailing over the Fjords to church and changing their clothes before entering church, fine pictures of the cities, especially of Bergen, where the rainfall is excessive, the wonderful waterfalls, the Laplanders in the northern part of the country, near the North Cape, the peculiar rock formations on the Lofoten Islands, the fishermen who catch such a tremendous number of codfish, amusing scenes on the deck of the steamer at one o'clock in the morning, and the magnificent effect of the sun at midnight near the North Cape were all depicted beautifully by Mr. Simpson's 4 x 5 camera, and the success of the exhibition in showing the proficiency of one member of the Society was particularly gratifying. An intermission of a few minutes was taken between the two trips, when Mr. Paul Du Chaillu, the author and traveler, who first gave the name, "The Land of the Midnight Sun," to Norway, made a few interesting comments on the people of the country, speaking particularly of their honesty, and of the characteristics of those located in different parts of the country. On the northern section were the fishermen and sailors, who were very expert in that calling. The Laplanders had and raised immense herds of reindeer. He had seen as many as seventy-five thousand of these deer pass a given point. He was pleased with the correctness of Mr. Simpson's views. Following him there was some very good zither music and light refreshments. There was a large attendance and everybody enjoyed the exhibition.

*Regular Monthly Exhibition of Lantern Slides, Friday Evening, April 26th.* The subject of the evening was the set of slides by the members of the California Camera Club, being an illustrated lecture on "The California Midwinter International Exposition," from January to July, 1894. Mr. W. E. Johnson, who was in California when the Fair was held, explained the views and Mr. F. M. Hale and Mr. Coutant operated the lantern. The slides were made by thirty different members of

the club and had a remarkably good technical average of excellence. It began with a portrait of the Director Gen'l and promotor, Mr. M. H. De Young, and views of the breaking of the ground, panoramic views, showing the location between the ocean and the city, good views of the different buildings, general and county, interiors, the allegorical fountain and the electric tower; the electric fountain, including several pretty effects; electric tower at night; the emergency hospital. A fine view of Mount Shasta, taken from the location of a representative mining camp, interior of a mining gambling palace and dance hall, several interesting views of Japanese theaters and tea houses and tea gardens; camels; the streets of Cairo; several views of Chinese and of a Chinese public school on parade and Chinese women; excellent pictures of the Samoans and Dahomeyans, showing their remarkable physique, and closing with a brilliant display of skyrockets, etc. It gave a very good idea of the scope and size of the Fair and of its several amusing pictures. It is fortunate for California that such a live club took up the task of illustrating so many things the professional would not undertake.

**Photographic Society of Philadelphia.**—The annual meeting occurred on April 10th, President Joseph H. Burroughs in the chair. The monthly report of the Board of Directors was read. Then Mr. S. Ashton Hand, Chairman of the special Committee on Standards, submitted the following report, with a series of recommendations:

#### STANDARDS.

##### *To the Photographic Society of Philadelphia.*

GENTLEMEN: Your Committee on Standards have the honor to report as follows:

The matters which seemed to us to be in special need of standardizing, and at the same time appeared to be of such a nature that reforms were practicable, are in our opinion the following:

Lens mounts and fittings; tripod screws; camera screws; sizes of dry plates; expressing the sensitiveness of plates; lantern-slide mats; manner of expressing formulæ.

After careful consideration of these subjects, we respectfully recommend the following for adoption:

*Lens Mounts and Fittings.*—All lens mounts up to 3" diameter to have 16 threads per inch and above 3" to have 12 threads per inch cut upon the part entering the flange. All threads to be United States standard, and to be cut off abruptly at the zero point. All flanges or adapters to have marks upon them to indicate the positions of the diaphragm slots or indices of the lenses, when screwed home. The mark on any adapter should coincide with the mark upon any flange into which it is screwed. This mark should be placed at the point at which the thread becomes complete, at the shoulder of the flange or adapter. All flanges to be plainly marked with the diameter of the lens mounts which screw into them, and all adapters to be plainly marked with the diameters of their internal and external screws. All lens mounts and fittings to vary in diameters by quarters of an inch up to 2½", by half inches up to 3½", and all above that size to vary by inches. All lens mounts to have the diameter of the threaded part which screws into the flange plainly marked upon them. Our reasons for the above recommendations are as follows:

1. The pitches of threads as above recommended, while enabling the lens to be screwed home with fewer turns than with the present system, will also insure the lens as a whole being disengaged from its flange when unscrewing, instead of the tube coming off from the back combination, as frequently occurs under the present practice.

2. We recommend the United States standard thread because of its ease of reproduction without the aid of costly special tools, and because it is the standard that has been adopted by all mechanics in this country.

3. We recommend that the thread be cut off abruptly at the zero point, because it eliminates the danger of getting threads crossed when starting to screw the lens

into the flange, and also acts as a tap to clean out any dirt that may have lodged in the threads of the flange.

4. We recommend the marking of flanges and adapters and the dimensions of variations in lens mounts and fittings, which we have copied from the recommendation on standards of the Photographic Society of Great Britain, because they seem to be of such obvious advantage that no explanation is necessary.

*Tripod Screws.*—All tripod screws to be either  $\frac{1}{4}$ ",  $\frac{5}{16}$ ",  $\frac{3}{8}$ " or  $\frac{7}{8}$ " in diameter, and in pitch of thread and other details to conform to the United States standard. Your committee believe that these sizes will be ample to hold all cameras, from the smallest Kodak to the largest size in use.

*Camera Screws.*—All camera screws which are used to operate movable parts or to clamp those parts in position, but not including screws used in the permanent construction, to be of either of the following standard machine screw sizes and threads: No. 4, 36 threads; No. 6, 32 threads; No. 8, 30 threads, or No. 10, 24 threads. We recommend these sizes and threads because lost or broken screws and nuts can easily be temporarily replaced at any hardware store, and all breakage could be permanently repaired at any ordinary machine shop, where these sizes are standard.

*Sizes of Plates.*—All sizes of plates to be derived from the size now known as 5 x 7, and shall either be multiples or divisions of that size. The smallest size we have provided for is  $3\frac{1}{2}$  x 5, and each advancing size shall have its breadth equal to the length of the preceding size, while its length shall be twice the breadth of the preceding size. Thus the series would be  $3\frac{1}{2}$  x 5, 5 x 7, 7 x 10, 10 x 14, 14 x 20, 20 x 28 and 28 x 40. We recommend the above sizes because the proportion of 5 x 7 seems a desirable one from an artistic standpoint, and that these sizes give a practically constant proportion throughout the entire system.

*Expressing the Sensitiveness of Plates.*—We recommend as expressing our opinions the adoption of the report of the Standard Sensitometer Committee, which was presented to this body December 13, 1893. Our reasons are that we believe that the system therein recommended presents more advantages than any other that has yet been devised.

*Lantern-Slide Mats.*—The standard size openings for lantern slide mats to be 2 by  $2\frac{1}{2}$  in. We recommend this size because in round numbers it conforms in proportion to the series of sizes recommended for dry plates, and appears to be a more generally artistic and pleasing shape than the squarer form now generally used.

*Manner of Expressing Formulae.*—All formulæ to be expressed in parts by weight. We recommend this because formulæ so expressed can be readily translated into the English or metric system, thus enabling the worker who prefers one system to present his results in a form strictly comparable with those of some one else who may prefer the other system. The advantages of this will most often practically be seen in the expression of developing formulæ, enabling one at once to see what proportion of Pyro or other developing agent is being employed. It will be noticed that in this report we have differed from the standards of screw threads recommended by the Photographic Society of Great Britain. We have done this because they recommend the adoption of the Whitworth thread, which is based on entirely empirical rules and can only be originated by the use of costly special tools. Your committee would finally recommend that this Society take suitable steps to gain the co-operation of the other principal societies in inducing manufacturers to adopt such standards as may finally be decided upon. S. ASHTON HAND, C. R. PANCOAST, F. WM. GEISSE, FRANK BEMENT, CASPER W. MILLER.

*Philadelphia, April 10, 1895.*

The report was accepted and discussion ordered at a future meeting.

The annual report of the Board of Directors was then read and approved, and the Treasurer's report was read, which showed the receipts to have been \$2,006.40, and the addition of a loan of \$200, making a grand total, including the balance on hand January 1, 1894, of \$2,552.79. The expenses were \$2,503.90, \$1,161.60 being for rent, heat, water and gas, leaving a balance on hand December 31, 1894, of \$48.89. The report was approved and ordered to be placed on file.

The report of the Board of Directors stated that thirty-one new members had



been elected since April, 1894, and twenty-four lost, nineteen by resignation, dropped four, and one died, showing a net gain of seven for the year. A vote of thanks was passed to the old officers, a recess was taken, and the annual election proceeded, the following ticket being elected by fifty-six majority: President, Joseph H. Burroughs; Vice-Presidents, Charles R. Pancoast and Robert S. Redfield; Secretary, Edmund Sterling; Treasurer, George Vaux, Jr. Directors: John C. Browne; John G. Bullock, Alexander Hemsley, William N. Jennings, William H. Rau, Samuel Sartain, Dr. Benjamin Sharp, Anthony W. Robinson, J. Hunter Ewing, Dr. Charles L. Mitchell, Samuel Castner, Jr., and A. B. Parvin.

The Secretary read an interesting communication, Mrs. Charles Schäffer, one of the new women members, suggesting that ladies be requested not to wear bonnets at lantern exhibitions, etc. Her suggestion was carried, and a rule prohibiting bonnets was passed.

Mr. Thomas Wakeman Lane read an interesting and valuable paper on "News-paper Illustrations," and exhibited a series of specimens of the different stages of the process of transforming a photograph into a line block for use in the newspaper. These included the various copies and drawings, negatives and positives, etc., and several zinc plates in different stages of etching. A cordial vote of thanks was extended to Mr. Lane.

Mr. D. S. Holman, a visitor, exhibited a series of colored lantern slides made by Langenheim, in Philadelphia, forty years ago, illustrating the story of "Reynard, the Fox." The slides were albumen copies of drawings, and they, with Mr. Holman's version of the story, were quite interesting. A vote of thanks was also extended to Mr. Holman. The meeting then adjourned.

#### COMING BROOKLYN INSTITUTE ANNUAL EXHIBITION.

The Department of Photography of the Brooklyn Institute will hold its annual exhibition at the Art Building, Brooklyn, from May 25th to June 3d. The exhibition will be divided into two sections; the first, or Amateur Section, will be limited to members of the Society, who will exhibit photographic prints and lantern slides, as specimens of the work done by them during the past year; the second section will be devoted to professional photographers and the trade, the exhibit consisting of prints on various kinds of paper, specimens of process work and printing, and samples of cameras, lenses, and new and novel apparatus.

The Amateur Section will be divided into two classes, Class "A," where the entire work is done by the exhibitor, and Class "B," where the negative is made by the exhibitor, and the print by another.

Artistic certificates of merit suitable for framing will be awarded to the best pictures and lantern slides in Class "A," by three competent judges, to be selected by the Society.

A souvenir catalogue will be presented to each visitor to the Exhibition and will fully describe all exhibits, both in the amateur and professional sections.

Any one wishing to exhibit in the professional section should apply, before May 10th, to Myers R. Jones, Chairman of the Exhibition Committee, 96 Remsen street, Brooklyn, N. Y., for entry blanks and further information.

## EQUATIONS OF THE CONJUGATE FOCI; THEIR DERIVATIVES AND THEIR USES.\*

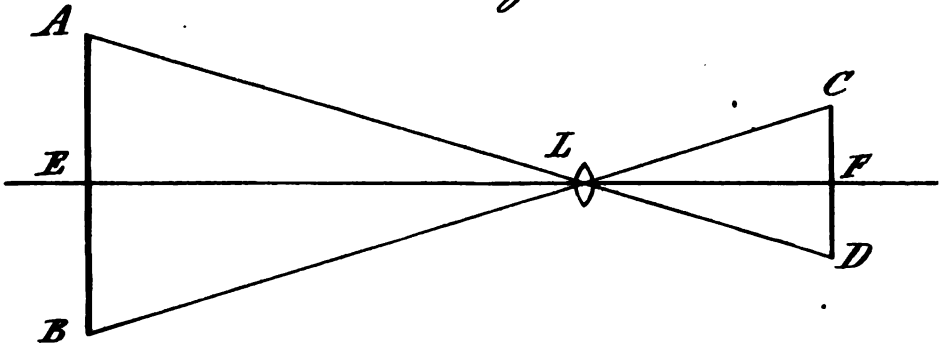
BY WILLIAM M. MURRAY.

*(Continued from page 169.)*

The utility of Branfill's expressions results from the incorporation of the ratio of the size of the object to that of the image into the several values of the foci as obtained from the general equation.

Let us resume the general equation  $-\frac{1}{F} + \frac{1}{f} = \frac{1}{p}$  (1)  $Fp + fp = Ff$  and

$$p = \frac{Ff}{F+f} \quad (2) \quad F = \frac{fp}{f-p} \quad (3) \quad f = \frac{Fp}{F-p} \quad (4)$$

*Figure III*

Referring to Fig. 3, we have the extreme rays of light  $AD$  and  $BC$ , from the object  $AB$ , proceeding in straight lines through the lens  $L$ , and coming to a focus at  $F$ , producing the image  $CD$ . Therefore, by similar triangles we have the proportion,

$AB : CD :: LE : LF$  or  $O : I :: F : f$   $\frac{O}{I} = \frac{F}{f}$ , and designating this ratio of the size of the object to that of the image by  $r$ , we have

$$r = \frac{F}{f} \quad (5) \quad F = rf \quad (6) \quad f = \frac{F}{r} \quad (7) \quad \text{Combining (3) and (6)}$$

$$r = \frac{p}{f-p} \quad (8) \quad \text{Combining (4) and (5)} \quad r = \frac{F-p}{p} \quad (9) \quad \text{Combining (2) and (6)}$$

$$p = \frac{rf}{r+1} \quad (10) \quad \text{Combining (10) and (6)} \quad p = \frac{F}{r+1} \quad (11) \quad \text{From (11)}$$

$$F = p(r+1) \quad (12) \quad \text{From (12) and (6)} \quad f = \frac{p(r+1)}{r} \quad (13) \quad \text{From (12) and (13)}$$

\* Read before the Society of Amateur Photographers of New York, November, 1894. Reported in the *Journal* of the Society, December, 1894.

$$F + f = \frac{p(r+1)^2}{r} \quad (14)$$

$$\text{From (14) } p = \frac{r(F+f)}{(r+1)^2} \quad (15)$$

From (10) and (15)

$$f = \frac{F+f}{r+1} \quad (16)$$

$$\text{From (16) and (7) } F = \frac{r(F+f)}{r+1} \quad (17)$$

From (16)

$$F + f = f(r+1) \quad (18) \quad \text{Expanding and reducing} \quad (14) \quad F + f = p\left(r + 2 + \frac{1}{r}\right) \quad (19)$$

## BRANFILL'S EQUATIONS OF THE CONJUGATE FOCI.

Compiling our results we have the following equations :

$$p = \frac{r(F+f)}{(r+1)^2} = \frac{F}{r+1} - \frac{rf}{r+1} = \frac{Ff}{F+f}$$

$$F = p(r+1) = \frac{r(F+f)}{r+1} - rf = \frac{fp}{f-p}$$

$$f = \frac{p(r+1)}{r} = \frac{F+f}{r+1} - \frac{F}{r} = \frac{Fp}{F-p}$$

$$F + f = \frac{p(r+1)^2}{r} = f(r+1) = p\left(r + 2 + \frac{1}{r}\right)$$

$$r = \frac{F-p}{p} = \frac{p}{f-p} = \frac{F}{f}$$

## APPLICATIONS.

## I. TO FIND FOCUS OF LENS.

The posterior conjugate  $f$  being the most inconvenient to measure, those values into which it enters as a factor are the least useful in practice as well as the most liable to errors. This is not the case, however, when it is added to the anterior conjugate, as in the first expression for the principal focus.

$p = \frac{r(F+f)}{(r+1)^2}$  is the easiest formula for finding the focus of a lens. We have

only to compare the similar dimensions of the object and the image, which gives the value of  $r$ , and measures the distance from the object to the ground-glass, which gives the value of  $F+f$ , substitute the values in the equation and we have the focus. For example, suppose we focus on any near object so that its image, when sharp, is one-quarter the size of the object (similar dimensions, of course; not the area but the square root of the area), then  $r = 4$ .

Let us say that the distance  $F+f$  is  $43\frac{3}{4}$  inches, then  $p = \frac{4(43.75)}{25} = 7''$ . Therefore  $F = 7 \times 5 = 35''$ , or the distance from the object to the optical center of the lens is 35 inches.

$f = \frac{7 \times 5}{4} = 8\frac{3}{4}''$ , or the distance from the lens to the ground-glass is  $8\frac{3}{4}$  inches.

$F + f = \frac{7 \times 25}{4} = 43\frac{3}{4}''$ , and  $r = \frac{35-7}{7} = 4$  times. And these results may be verified *ad libitum* by any of the other expressions.

## II. TO FIND FOCUS OF LANTERN OBJECTIVE.

$\phi = \frac{F}{r + 1}$  is a convenient formula for ascertaining the proper focus of a lan-

tern objective, to give a certain size of image in a hall of known dimensions. Several years ago it was proposed to place our lantern in the back of the meeting room, at a distance of 60 feet from the screen. The screen being 105 inches wide, the mag-

nification of a 3" picture would be 35 times and  $r = 35$ ,  $\phi = \frac{F}{r + 1} = \frac{720''}{36} = 20''$ , and the lens required would be of 20 inches focus.

## III. TO FIND LENGTH OF COPYING BOARD.

If we desire to construct a copying apparatus to perform certain reductions or enlargements, having a lens of known focus, and wish to have the dimensions as compact as possible, we may use the expression for  $F + f$  to find the length of the copying board. Last winter the Society provided a reducing camera for our members who had hand-camera negatives with converging or tipsy verticals requiring correction. As we wished to economize space, it was necessary to calculate the length of copying board, using a 4 inch lens, to reduce  $5 \times 7$  and  $4 \times 5$  negatives to lantern size.

Allowing three times as the greatest possible reduction,  $r = 3$  and  $\phi = 4$ .

$$F + f = \frac{\phi(r + 1)^2}{r} = \frac{4 \times 16}{3} = 21\frac{1}{3} \text{ inches.}$$

A board 24 inches long would therefore be amply large enough to do all the work required, on which indeed we might reduce  $8 \times 10$  negatives to lantern size.

## IV. TO FIND SIZE OF IMAGE.

The expression  $r = \frac{F - \phi}{\phi}$  enables us to ascertain the sizes of images of objects at varying distances from the camera. It is useful, for example, in operating the hand camera, to know what size a man would appear on the ground-glass at, say, 10 feet, 20 feet, and 40 feet distance, the lens being of 7" focus.

At 10 feet  $r = \frac{F - \phi}{\phi} = \frac{120'' - 7}{7} = 16$  times. At 20 feet,  $\frac{240 - 7}{7} = 33$  times; and at 40 feet,  $\frac{480 - 7}{7} = 68$  times.

As the average height of a man may be taken as about  $5\frac{1}{2}$  feet, or 66 inches, his image at 10 feet would be  $\frac{66}{16} = 4$  inches. At 20 feet,  $\frac{66}{33} = 2$  inches. At 40 feet,  $\frac{66}{68} = 1$  inch nearly.

## V. TO FIND REQUISITE SPEED OF SHUTTER.

The value of  $r$  may also be used to calculate, approximately, the speed of a shutter required to photograph an object moving across the field of the lens at a certain rate. An athlete running 100 yards in 10 seconds, would move 360 inches in 1 second.

At 40 feet distance, with a lens of 7 inches,  $r = \frac{F - \phi}{\phi} = \frac{480 - 7}{7} = 68$  times.

$\frac{1}{100}$  inch is regarded generally as the greatest allowable amount of blur consistent with apparent sharpness, and we may say that  $\frac{1}{100}$  inch on the ground glass represents  $\frac{1}{100}$  inch traveled over at 40 feet distance.

Then,  $360'' : \frac{68''}{100} :: 1 : \frac{1''}{530}$ . So it would require a shutter speed of about  $\frac{1}{500}$

sec. to sharply picture a sprinter forty feet away, moving at right angles to the lens, and even this makes no allowance for his legs moving more rapidly than his body.

Of course, when he is moving toward, or away from, the camera a slower shutter will suffice.

#### VI. TO FOCUS A HAND CAMERA.

Two of the expressions of value for  $r$  may also be utilized in the focusing of hand cameras. For example,  $r = \frac{F-p}{p}$  and  $r = \frac{p}{f-p}$ . Therefore,  $\frac{F-p}{p} = \frac{p}{f-p}$

Having focused the image of a distant object sharply and marked the position of the ground glass on the bed of the camera, it is evident that the distance between the optical center of the lens and the mark is the principal focus. For any nearer objects we must rack out the ground-glass an additional distance equal to  $f - p$ .

Calling this additional distance  $y$ , we have from the last equation  $f - p - y = \frac{p^2}{F-p}$  and for distances over 20 feet we may disregard  $p$  in the denominator as being very small in comparison with  $F$ . Then  $y = \frac{p^2}{F}$

With a 7 inch lens in our hand camera, therefore, we must add to our focal length, for objects 20 feet away, the distance  $y = \frac{49}{240} = .204$  inch, and for 40 feet, the distance  $y = \frac{49}{480} = .102$  inch, and for 80 feet the distance  $y = \frac{49}{960} = .051$  inch.

Thus, we see that if we mark the position of the ground-glass for the principal focus and then the position for a short distance, as 10 feet, the mark for the focus of objects at 20 feet will be found half way between them; and for 40 feet half way between that for 20 feet and the principal focus, and so on, thus,

\_\_\_\_\_ focus for parallel rays.  
 \_\_\_\_\_ focus for 80 feet.  
 \_\_\_\_\_ focus for 40 feet.  
 \_\_\_\_\_ focus for 20 feet.

\_\_\_\_\_ focus for 10 feet.

There is so little error in this calculation, notwithstanding the omission of  $p$  in the denominator of the formula, that it may be regarded as approximately correct, especially for the small lenses used in hand-cameras. For the shorter distances, as 10 feet or less, it is advisable to focus directly on the object before making the mark.

(To be continued.)

*"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 188, Vol. VII.*

using a fresh filter. Flow the varnish over the slightly warmed plate as usual. As a good negative varnish can be easily obtained from the dealers when but little is required, it is better to purchase than to make.

**NEGATIVE WASHING**—Too much importance cannot be given to the thorough washing that the negative should receive after leaving the clearing bath. On it depends, in a great measure, the elimination of the last trace of hypo and the future well-being and life of the negative. The mere allowing the negative to remain in water for hours is not enough, and especially so if it is allowed to remain flat in the tray either face up or down. The solution of hyposulphite of soda formed is much heavier than water, and, of course, gravitates to the bottom, and the plate in the position mentioned is surrounded with what it is desirable and necessary to get rid of. The negative should be washed under the tap first for some time and then placed in a box or tank so prepared that it can stand on end on a perforated bottom, which should be an inch or more above the real bottom of the vessel. By this arrangement the heavy hyposulphite sinks away from the plate and can easily be drawn off. A gentle stream of water should circulate over the negative for several hours.

**NETWORK APPEARANCE IN THE FILM**—In the dry plate a reticulated or network appearance sometimes makes its appearance in the negative after passing through the clearing bath. This can be ascribed to the *beginning* of decomposition of the gelatine in the emulsion, a more advanced stage of decomposition producing large opaque spots and other defects. In wet plates the same defect is produced by poor collodion.

**NEUTRAL OXALATE OF POTASH**—See Potassium and its Salts.

**NICOL'S SENSITOMETER**—Practically it consists of a square box so divided as to represent any number of square tubes. Nine of 2 inches square and 3 inches deep should answer admirably and would assume the form of a box 6x6x3 inches. One side of the box or one end of the box is fitted so as to receive a plate holder in which the plate is placed, and the other side or end of the tubes is covered by a metallic plate in which are drilled nine holes, each in the center of one of the square tubes and each exactly twice the value in light admitting area of its predecessor. The size of the openings, distance of the flash from the plate, and quantity of magnesium flashed could be easily arranged, so that the nine numbers would

include plates from the slowest to the most rapid in use at present; and while a sensitometer thus arranged might not be altogether perfect, it certainly would approximate more nearly to perfection, and convey a more correct knowledge of the true sensitiveness of a plate, than any form of instrument that has yet been proposed.

**NIEPCE**—Joseph Nicephore Niepce, born March 7, 1765, began experiments in photography and obtained images upon a bitumen film. Owing to the very long exposure required, for ordinary purposes the practice was impracticable. He was in partnership with Daguerre and continued the experiments, but died before Daguerre announced his process.

**NITRATE OF SILVER**—See Silver Nitrate.

**NITRIC ACID**— $\text{HNO}_3$ —See Acids.

**NITRIC ACID BURNS, CURE FOR**—It is not generally known that the application of a dilute solution of sulphurous acid to a burn caused by nitric acid will speedily relieve the pain and cause the wound to heal in a very short time. Assuming that the action of strong nitric acid is an intensified process of oxidation, the dilute sulphurous acid acts as a reducing agent which is at the same time innoxious.

**NITRO-PRUSSIDE OF SODIUM**— $\text{Na}_2(\text{NO})\text{FeCy}_4 \cdot 2\text{H}_2\text{O}$ —Readily obtained by heating 2 parts of powdered potassium ferrocyanide with 5 parts of common nitric acid previously saturated with its own volume of water. Crystals are rhombic and of a splendid ruby color. All the soluble nitro-prussides strike a most beautiful violet tint, with soluble sulphides affording an extremely delicate test for alkaline sulphide. It has been recommended instead of hyposulphite of soda as a preliminary bath before development to accelerate the speed of gelatino-bromide plates. With it a pyrogallie developer can be used, which is not the case with the hypo-bath. Nitro-prusside of soda 1 part, water 300 parts.

**NODAL POINTS**—Sometimes called the centers of admission and emission.

**NON-ACTINIC RAYS**—Rays of low refrangibility, which have little or no effect upon the sensitive plate. Were it not for this peculiar fact, photography would be almost impossible, for no light could be found in which to manipulate the plates without their being affected and consequently destroyed.—See Spectrum.

**NUCTIGONIA**--About two years ago a patent was obtained on a process that permitted the development of a plate in full daylight, without the fear of fogging, thus doing away with dark rooms. At least that was what was claimed. But the plate had to be transferred from the slides to the developer in a place free from actinic light. It was soon discovered that some dye was added to the developer, which prevented the action of light upon the plate. Several formulas have been given. One ounce of the following is added to the developer, preferably hydroquinone: Water, 24 parts; alcohol, 24 parts; aurantia, 16 parts; carmine, 8 parts, which is shaken until complete solution and afterward filtered.

**NUMBERING PRINTS**--To number albumen prints or entitle them effectually and distinctly is to write upon a dark part of the print with a steel pen and ink composed as follows: Iodide of potassium, 1 part; water, 2 parts. A short time after writing, the letters appear white, the silver of the prints having been converted into iodide of silver; and as the iodide of silver, which is formed when an excess of iodide of potassium is present, is not sensitive, the writing is permanent.

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**OBERNETTER'S PROCESSES**--Two processes by the same inventor, frequently mistaken one for the other. First, a heliographic process much used in Germany. The gelatine coating exposed behind a negative is covered with an impalpable metallic zinc powder. The plate, after this operation, is heated to a temperature of 200° Cent. (392° F.). It is submitted to the action of a very weak solution of hydrochloric acid, and then well washed. The parts of gelatine covered with the metallic powder can be more or less damped, and therefore refuse the greasy ink, while those free from the zinc receive it. Second, photo-engraving process. A positive is produced on a film of gelatino-bromide of silver, very rich in the silver salt. The silver of the developed and cleared image is converted into chloride of silver by the action of perchloride of iron and chromic acid. The film is then wetted and brought into contact with the surface of a copper plate, which it etches, the chlorine leaving the chloride of silver to combine with the copper, forming chloride of copper, which is soluble in water.

**OBJECTIVE**--A name frequently given to the lens.

**OCEAN BOTTOMS, PHOTOGRAPHING THE**--About all of the photographs taken in the depths of the sea are by experimenting amateurs, and



through them most marvelous hidden mysteries have been revealed. The operation is simple ; a box hermetically sealed, with glass front, is sunk and to it is connected an electric light. At a certain depth light fails to penetrate the water and all is darkness. Sinking this device to a short distance from the bed, the electric current is turned on, which illuminates everything within a certain radius, and at the same instant calls into action the mechanism of the submerged camera—often to be sure almost nothing appears upon the plate, but sometimes the instrument is lowered among most interesting formations of nature and pictures are produced of incalculable value to science.

**OIL**—An unctuous substance expressed or drawn from various animal and vegetable substances, consisting of a base called glycerine, united with different animal and vegetable acids. But few of these oils have any photographic interest, castor oil, vaseline, vaseline oil and paraffine oil. The former used for rendering paper negatives transparent, and the latter as a preservative of the ferrous oxalate developer. Vaseline is also useful with ground glass stoppers, preventing their too close adhesion, and also the ingress of air to the bottle.

**OIL PAINTINGS**—To copy—See Copying and also Hints on Copying.

**OPACITY**—Sometimes used synonymous with density, which is incorrect; meaning the quality of a body which renders it impervious to the rays of light.

**OPAL GLASS PICTURE OR PORCELAIN GLASS**—The old collodion method gave lovely results, but the difficulty of washing them rendered them fugitive. Through the efforts of Mr. Carbutt and others, successful and beautiful results are now obtained. The plates are coated with a platino chloride emulsion in the usual way. The picture can be made by contact printing or by copying in the camera. By the latter method, odd or any size negatives can be utilized. Pictures on watch dials made in this way are very pretty. The development of chloride film on opal plates is similar to the development of chloride paper. The image should show gradually ; if it flashes out, either the exposure is too much or the developer needs a little bromide ; 1 to 3 drops of a 50 grain solution to each ounce of the developer has a strong restraining action in the presence of the citric acid and chloride of ammonium. For very warm tones dilute the developer with equal parts of water and add one or two drops of bromide solution to each ounce of developer, but be sure to give at least double the exposure ; do not carry the development too far, as the image loses very little in clearing. For a positive on opal the development should be stopped the moment the details show in the high lights, and this is most effectually done by quickly removing the plate from the developer and flushing over the sur-

*To be continued.*



By KAN. GARDER.

..HOMEWARD."

# THE AMERICAN AMATEUR PHOTOGRAPHER,

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## Dreams of Sir Walter Scott- Melrose Abbey, Abbotsford, and the Old Castle at Edinboro'.

ARRIVED in Edinboro' one warm June morning, having traveled from London the night before. I went at once to the Palace Hotel, secured a room from whose windows I could see the grand old castle, high up on a steep cliff. Though the morning was ablaze with sunlight the castle looked cold and gray against the sky. Sir Walter Scott came to my mind as the romantic scene lay before me, and the people who had lived in his books seemed to be starting forth from every country road, for late that morning I drove to the castle and found it full of interest. I was shown the room where James I. was born, and the window through which they lowered him in a basket. As I stopped in the courtyard to survey the interior, my informant pointed to a certain part of the wall which was slightly different from the rest, and then proceeded to tell me this mysterious tale :

"Well," he said, "one of the Governors had that part torn away a long time ago, because some workmen, while repairing it, noticed that it sounded hollow. When they had obeyed the Governor's orders, they found a small coffin secreted in the wa

it lay a skeleton of a dead child clothed. No one knew its origin, so the Governor placed in the coffin, walled up again there to this day, a great mystery.

I smiled rather incredulously, yet it was interesting. I passed on down the dungeons, "dark and cold and dreary." Heavy chains held the iron doors fast. Within these vaults were stored many cooling draughts of beer for the use of the regiment quartered there. As I turned to take my leave I went out under the drawbridge, looking down

AMATEUR PHOTOGRAPHER.

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"THE LIBRARY"

laymate from amongst his school-fellows.  
for during his holidays this was the de-  
would tell each other stories, wild tales  
of knight errantry, battles and witch-  
craft. They made them long-drawn-  
out, continuing them from day to day.  
They generally selected these romantic  
roads around Edinboro' for these pas-  
times, and would go forth in the quiet  
of the peaceful twilight hour, which, in  
Scotland, is the most beautiful time of  
day. After his boyhood days had  
passed, Sir Walter, at the age of fifteen,  
was stricken down by a severe illness,  
proceeding from a broken blood vessel,  
and was forced to keep to his bed con-  
d to read, and he plunged into litera-  
every book that came within his knowl-  
; library in Edinboro', founded by the  
cott read from morning until night, un-  
ive a game of chess with him. He  
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## "DREYBURGH."

Scott had paused and recounted a legend about it in those far-away, childish days. The time was growing late, yet how beautiful the glow of evening, the calmness, the dreaminess of this hour. "Alas, that dreams are only dreams!" And I knew I must return to the hotel, so I reluctantly made my way back

"Jeannie Dear  
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for Melrose,  
about an hour,  
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Myroomfaed  
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quiet come-

About half  
the evening  
the ruins. Ah, me! what a heavenly place it was! I walked slowly along the path of the broken aisle, whilst at the far end were the crumbling ruins of the High Altar entwined by ivy. Birds flew drowsily away, as if they realized that the last rays of day were struggling to stay, but soon they, too, dispersed, and the stars stole into the sky with a glorious moon gliding near them, and its rays slanting over the grand scene. I seated myself on the self-same stone where Scott used to stay and dream the hours away, and gradually from these long and constant reveries in this old Abbey he thought out the romance of "The Monastery," where "Queen of Fairy, with harp and pipe and symphony, were dwelling in the place."

As I walked along, the air about me seemed resonant with Scott's childish voice, recounting some thrilling adventure to his school-mate. The Firth of Forth, rippling peacefully by, whispered the story to the green waving meadow grass, and so on—on, down—down to some picturesque ruin, where perchance

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day I started  
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Abbey Hotel.  
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I went to view

"ABBOTSFORD."

After a while I wandered about the cloister, and then up a narrow stairway, where the monks used to linger before entering the church. As I stood on the topmost ledge and looked down into the ruins below, a lovely sweet-toned bell tolled the hour—ten o'clock—its notes proceeding from a clock built in at the head of the stairway, and made by a blacksmith who lived in Melrose. The scene in the moonlight

was shrouded, here and there by dark shadows thrown from some ruined archway, or, again, the outline of a broken window would make itself distinctly visible on the patches of turf left in the moon rays.

From where I stood I could see the other side of the Abbey,—the silent graves, each one a memory of a departed soul. I fully expected to see a white swath steal from a tomb and beckon me to follow them along the gloomy paths left by the graves. Yet a while longer I lingered, then sought the cosiness of the Abbey Hotel. The next morning I started for Abbotsford, Sir Walter Scott's home.

In 1805 Scott first made his synopsis of "Waverley," and it was to have been published by Mr. John Ballantyne, an intimate friend of the author's, but Scott read the first and second chapters to a critical friend, and his opinion was so severe and unfavorable that he threw the MSS. aside and

returned to his former ideas of writing verse instead. These pages of his MSS. were thrown carelessly into a drawer of an old writing desk which was placed in a lumber garret at Abbotsford, when Scott first went there to live, which was in 1811.

He often thought of this half-finished romance, but could not remember where the pages were, and

"THE FARRIER." BY JOHN G. BULLOCK.

"CHANGING PASTURES." BY KARL GREGER.



felt too indolent at that time to search for them, for he was busily engaged in writing, or rather arranging for publication some posthumous works of Mr. Joseph Struth, an artist and antiquary. Amongst the collection was a romance entitled "Queen—Hoo—Hall"—the scene being laid in the times of Henry VII. This started the author's thoughts in the direction of writing a romance of his own times and customs, and his mind recurred once more to the lost pages of "Waverley" and by accident he found them.

He happened to want some fishing tackle for a guest who was spending a few days at Abbotsford, and went to look for it in the old writing desk, when, to his delight, he discovered, amongst the lines and flies, the long-lost MSS. He immediately set to work and finished it, giving to

"A MARSH LANE." BY JOHN G. BULLLOCK.

the public descriptions, scenes and manners of the people of the Highlands. The book, as every one knows, achieved a lasting success. It was published anonymously, as were many others, the author's motive for this course being that this first book was an experiment on the public, and might prove a failure. He did not like the idea of being personally discussed, but, when later books of his appeared in the same way, no reason could be given save that such was his humor. He began writing late in life, at an age when his friendships were formed, his place

in society fixed, and "life attaining middle course." What wonder that he wrote and published as he pleased? Yet he felt deeply grateful for the public's appreciation of his work. Scott, when accused by his friends of being the author of his own works, invariably denied any knowledge of them. Lord Byron writes of a conversation with Scott to this effect:

"I was talking to him about *Waverley*, and lamented that the author had not carried the story nearer to the time of the Revolution. Scott, entirely off his guard, replied: 'Ah, I might have done so, but——' and there he stopped, looked confused and relieved his embarrassment by a *precipitate retreat*."

This brief reminiscence came to me as I neared Abbotsford, entering the grounds through a small ivy-twined gate, and walked along a path edged with boxwood, and so on into the house itself. At one side of the doorway was this description: "By night, by day we thank the Lord." There were a few more words which I could not decipher. I entered the study where Scott had passed so many hours of the day and night, working on his beautiful romances. The walls were literally lined with books. I sat down in his great arm chair, and for a moment I felt his spiritual presence near me in the sunlight as it glanced across his desk. But I could not linger forever here, so passed on into the library, thence into the drawing room, where a superb painting of Nell Gynne attracted me, and also a clever painting of a feast, the subject being a party of gaily attired sportsmen who had evidently been out for a hunt and had stopped at a manor house for dinner. The hostess, taken unawares, finds absolutely nothing in her larder, so serves to the jolly assembly a dish of spurs and in another one a number of boots. They have just uncovered the savory repast, and the expression of their faces is very amusing. I observed the portrait of the present owner and inhabitant of Abbotsford, the great-granddaughter of Scott. She had a fine, intellectual face, and looked worthy of such a grandsire.

The morning was fast speeding away, and I wanted to reach Dreyburg Abbey before my return, so I reluctantly left Abbotsford.

As I went along I passed Ravenswood, the home of the ill-fated Bride of Lammermoor, a gloomy place haunted by ghosts. Presently the ruins of Dreyburg were reached, and I found them very beautiful. I stood in meditative silence beside Sir Walter Scott's tomb. How great a mind was resting there! Yet he, in reality, was, perchance, thinking romances still in that soul life of eternity. As I turned away and entered the ruins of the monks' dining room, I found some yellow wall flowers blooming in rich abundance in the grey, mouldering walls. I plucked a large bunch of them, and what a sweet, pervading perfume came to me as I held them in my hand. And then I took my leave of all these scenes, dreaming, as I returned to Melrose, of Sir Walter Scott and how easily he had glided into his place in literature and how, even to-day, one reads him with pleasure and a refreshing sense of the master mind at work between the lines.

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Beginners' Column.

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CHAPTER XX.—LINES.

BY JOHN CLARKE.

THE beginner who has followed me through the preceding nineteen chapters and made practical experiment go hand in hand with his reading will now be, in one sense of the term, a good photographer. He will have mastered the technique sufficiently to be able to produce good, clear, clean sharp negatives, and to make first-class prints therefrom by various printing methods; negatives and prints, in fact, equal to at least nine-tenths of all that are turned out either in this or any other country. He will have reached a stage, in fact, at which a large majority of the photographers throughout the whole world stop; and yet he has only acquired what should be considered simply *the means to an end*. He has learned how to make a photograph; but unless he be one of the favored few who are "born artists," he has yet to learn how to make a picture.

A love for pictures, pictorial representations, and picturesque groupings of natural objects is universal, but the pleasure derived therefrom varies very much in degree, and is largely dependent on what, for want of a better term, is generally called the extent of the acquaintance with art of the individual observer.

The average visitor to an exhibition of pictures, or the average individual who examines a portfolio of drawings, will find some that he likes and some that he dislikes, or at least some that he likes very much better than others. If he were able—which generally he is not—to analyze those pictures, he would find that those which impressed him favorably had certain things in common which were absent in those that made a less favorable impression, and that the latter had much that was not to be found in the former.

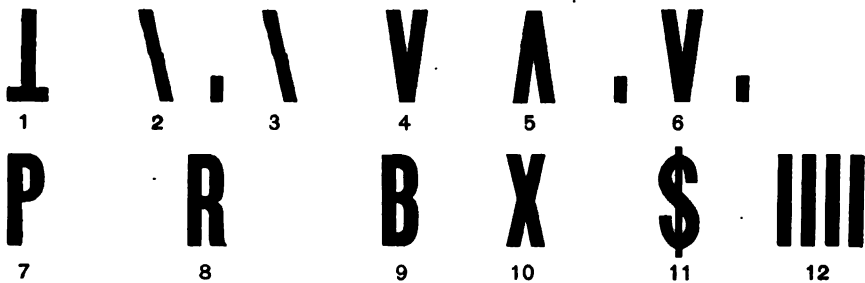
This analysis has been made, has in fact been in process of making for many years, and the result has been the evolution of what has been called the laws of composition and light and shade, or *chiaroscuro*, briefly the "Canons of Art." The "born artist," of course laughs at canons of art, and so does the artist not to the manner born, but who has through long and hard study reached high up the ladder, but forgotten the early steps through which he was helped, and they may safely do so. They may safely claim, as they do, each to be a law unto himself, because they, the one by nature, and the other by study, are so imbued by true

art feeling that those despised canons are faithfully, although perhaps unconsciously adhered to.

It is important, then, that the student of photography who aims at something higher than a mere photograph should give careful attention to the canons of art, as, although it may be that by no amount of such study can he become a great artist, the knowledge that he will thereby acquire will prevent him from doing much that he would otherwise most certainly do, and lead him to do much that without that knowledge he would with equal certainty have omitted.

A picture is made up of lines, perpendicular, horizontal, and at all sorts of angles and curves ; indefinite, generally, but always clear to the imagination. An ordinary mountain, for example, includes all three, the base representing the horizontal, from the center of the base to the top the perpendicular, and the sloping sides the angle. Horizontal lines convey the idea of repose, quiet, restfulness ; perpendiculars, boldness, strength, action ; each independent, and self-sustaining, while the angles suggest all degrees of effects between those opposites, are never self-supporting, and always co-related to others of their kind.

By composition is understood the arrangement of these lines in such a way as, while truly representing the natural objects included in the picture, to produce the desired effect, which implies variety, contrast, harmony and balance. A little study of the following ordinary *sans serif* Roman letters will perhaps help to make clear the ideas I wish to convey :



In Fig. 1 we have the contrasting lines of strength and repose, and so far it is complete, although from a pictorial point of view it lacks variety, a quality that it will acquire if the student will, in imagination, move 2 so that its lower end shall touch the right of the base, and its upper the upper end of 1. A second line from the left base to the upper point of 1 will increase the variety and give an additional feeling of stability, but at the same time lessen its pictorial quality by the intro

duction of uniformity. Fig. 2 conveys at once the idea of weakness, an inability to be self-supporting, qualities which disappear on the addition of an opposing line, as in 5; although, as in the other case, the cure is worse than the disease. But weak lines may be supported without the introduction of objectionable uniformity by shorter lines, lines at varying angles, or by smaller objects suitably placed, as in 3, where the period answers the purpose admirably, giving a feeling of strength and stability.

The necessity for supporting weak lines must never be forgotten, especially as when they are properly supported they are stronger than lines that do not need support, while at the same time lending themselves much more readily to the production of the picturesque, hence the pyramidal form of composition is more frequently employed than all the other forms together. Why this should be so will be evident from a comparison of 4 and 5. They are equal, so far as contrast is concerned, although it is the contrast of uniformity; but 4 is as a house built on the sand, while 5 is as on the solid rock. But objects with lines as in 4 are common enough, and their weakness may be converted into strength, as will be seen in 6, by any suitable supporting object.

In Fig. 7 we have variety and contrast, but a feeling of weakness, which disappears in 9, the second curve giving strength or support, and increasing the harmony, but also introducing an objectionable uniformity. Fig. 8 is very much better, as the support, contrast and harmony are almost complete, although in effect very far behind 11, the balance given by the opposing curves giving a combination nearly perfect. The tasteless insipidity of repetition as shown in Fig. 12 should be laid to heart by photographers, as it is a snag against which they very often strike, even professional photographers of such standing that it might have been supposed they knew better, producing pictures, or what should be such, with half-a-dozen or more straight lines, horizontal or perpendicular, formed by the thoughtless, careless, or ignorant combination of dados, fancy chairs, and unsuitable furniture. Straight lines must needs come, but the man that cannot compromise, and put them into good composition by crossing, as in Fig. 10, but without producing uniformity, or in some other way, is unworthy of the name of artist.

Lines, then, straight and curved, form the skeleton of the picture, and to the eye trained to recognize them, are readily found in every part of the composition, and on the way in which they are arranged depends, to a great extent, its success or failure.

When the eye is attracted by a pretty bit of landscape, then, the way to make a photograph is just to place the camera at what appears to be a suitable point of view and expose a plate on it, as is done by a great ma-

jority of the devotees of the camera, but the way to make a picture is very different. The photographer who aims at being also an artist, should first decide as to the limits of the picture, the space to be included, and then look carefully for the lines. The foreground and horizon, of which I shall speak in next chapter, will require attention first, but when they are satisfactory, the composition must be gone over line by line. He will see that weak lines are supported, either by opposing lines, or by suitable objects, that lines shall not be repeated like the parallel lines of a five barred fence, or if they must be so, that they are harmonized by others in opposite directions. That under no circumstances may straight lines run horizontally across the picture from side to side, and that whenever two or more must come near to each other, they shall vary considerably in strength, that is, a broad line next to a narrow one. This applies equally to both horizontal and perpendicular lines, and equal care must be taken that short upright lines shall not be perpendicularly over each other, a law almost constantly violated in large groups of figures, where more frequently than not, two and sometimes three or more heads are on a perpendicular line. Lines may run from the foreground leading the eye to the principal object, or from some particular point, out of the picture, but never, as I have already said, right across it.

Somebody has said that color is the poetry of nature, and lines its hard facts; and as the photographer cannot avail himself of the poetry, he must give the greater attention to his facts—must manipulate them so as to, as far as possible, make up for the absence of color, always remembering that when he does succeed, the greater honor will be in proportion to the greater difficulty. Nature is not, on the whole, artistic, yet she deals but sparingly in straight lines, the seashore and the horizon being almost her only efforts in that direction, a state of matters for which the photographer should be thankful, as wheresoever they occur, good composition requires that they be harmonized, supported or contrasted. Fortunately, angles more or less acute, such as the bendings of a river or a road, are often available, and may be lengthened or foreshortened at will, so as to produce the desired effect.

In brief, the photographer who aspires to be also an artist must recognize the lines in the subject which he selects, and by moving from point of view to point of view, strive to harmonize them with themselves or others, contrasting those that are straight with those that are curved, and producing variety by suitable curves of varying degrees of curvature, and curved in various directions. Generally speaking, the educated and cultured eye will succeed in finding a suitable point of view from which a satisfactory composition may be obtained; but, of course, there are exceptions, and in such cases it is always better to look for another subject, or to bring home an unexposed plate, than to produce a picture sufficiently faulty to require an apology.

## English Notes.

BY GEORGE DAVISON.

**THE RECENT PARIS EXHIBITION.**—This is an annual International Exhibition in which the promoters, the Paris Photo Club, have the cause of art photography genuinely at heart. The aim is said to be exclusively artistic. The regulations are of the simplest—no awards, strict selection by a competent jury, no classification and no charges for space. The only point open to criticism appears to be the request for particulars as to the production of the picture, the materials, tools and procedure adopted. In an exhibition of which the aim is purely artistic, this, in my opinion, is a mistake and mischievous. A picture exhibition is a show of artistic, if you will, poetical, results; not a scientific laboratory or school

for beginners. I know that in some instances such a regulation is eagerly demanded, but such demand is made at the instigation and under the influence of those whose chief interest and joy are in mechanical work and not in original artistic effect.

The man who aspires to produce pictorial photographs does not require such information and must not go pilfering around to copy other workers' expressions and special styles. He must depend for his expression upon his own perception and selection in every step of the processes he chooses. Individuality and personal character are of the first importance in art work, and for these to show in our results we must rely on our own observation, selection and technique.

I cannot help passing a word of criticism on the catalogue, as the remarks will apply equally to most of the catalogues of photographic exhibitions, both in the States and in England. A catalogue of what purports to be a purely artistic exhibition ought surely to show some taste or even artistic thought. As a rule, the catalogues of these exhibitions have no artistic character at all, and are little better than a superior tradesman's list in appearance. I can remember some of the American catalogues in which inferior illustrations were included, as they are in the Paris catalogue. In such a work, unless the illustrations can be done artistically they had better be omitted altogether. It is of no use or credit to use expensive stout paper, and the best printing, if no thought and taste are displayed in the arrangement and disposition of the book.

**CRITICAL NOTICES.**—The criticism of purely artistic exhibitions to which we are accustomed in the photographic papers, is, as a rule, of no value whatever. It seems generally to be entrusted to photographers who happen to be routine workers on the staff of the papers—excellent men, but without any practical experience in art production or critical perception for pictorial qualities. It is not to be expected that, under such circumstances, their comments can lead to a “current of true and fresh ideas” and, consequently, to more effective and original work.

One criticism of this Paris exhibition I must notice in a few words. M. Frederic Dillaye, who is honored with the task of writing an introduction to the catalogue, puts forward such a delightful statement of the artistic faith and hope that are in him that it is impossible to pass it by. He maintains that in photographic art there must be no imitation of other art methods, and all the means used must be visibly and purely photographic, and must hold strictly to the *special characteristic* of photography, which he lays down is “a definition, complete, exact and minute, of all objects, a definition unattainable by any other art.” He goes on to object to all photography without objectives (pinhole photographs and the like), on the ground that, not taking advantage of the special characteristics, they cannot be art; and he pins his faith to taking small photographs and enlarging them, which, he says, is the shortest and easiest cut to photographic art, and corrects perspective and introduces atmosphere! But this enlarging introduces slight blur, and so, finally, he upsets all his own hard and fast dogmas by admitting that his so-called characteristic sharpness would, for art purposes, be *too* minute and would cause a want of interest and sense of flatness to be *felt*.

A more illogical position it would be impossible to take up. He gives no reason and makes no appeal to the science of vision or to psychological theories. After laying down hard dogmas, in order to fling a stone at what are, at the worst, extremist examples, he has to modify his own canons to suit them to his own personal preference for *just a little* softness—not much.

I take M. Dillaye as a typical instance. There are many others in the same quandary who will not see that personal preference should be the supreme guide in these art matters, and that what they term extreme methods have their characteristic qualities and special power, just as a middle course has.

To answer M. Dillaye in brief, one can only adopt his own plan of flat assertion. (1) There is none of this imitation of other arts so much complained of, either of fine, glossy miniature painting or of rough, broader sepia drawing; the similarity in each case is natural because the aims and objects are the same in both art drawing and art photography.



(2) Minute definition is *not* the special characteristic of artistic photography. The draughtsman can equal its minuteness at any small point if he desires so to do. He does not attempt it because he prefers broader qualities. It is the *EASE* with which minute drawing or broad treatment, a full and complete record of form, tone and other relations, can be made at one blow, that is the special characteristic of photography. This is where confusion arises. Definition is merely a quality dependent upon the optician's instrument, and relative focussing is just as much common to all the arts as is "choice of motive, arrangement of lines, relation of light and shade, general harmony and balance of composition," as admitted by M. Dillaye.

(3) As to photography without objective, it need only be replied that pinhole photographs may be quite as sharp as the enlargements referred to; that in some respects the pinhole aperture is the best of objectives, and that it certainly has its particular character of softness, which is different from, and often more pleasing than, any other treatment.

(4) Fancy a nostrum or specific for photographic art, a short and easy cut to poetical expression! Need I answer that there is no royal road to making artistic pictures, either by any one lens or no lens, or by enlarging. Each method has its distinctive qualities, which must be studied and understood and worked up to, and each worker must hold himself free to use any method, tool, material or style of definition that he chooses to suit his purpose. Selection is the great secret throughout all his steps and stages, by which his own feeling must be shown in his work. He has to try to realize and render what he actually sees and feels, not make a repetition of something pretty done by somebody else.

PORTRAITURE FOR AMATEURS.—Perhaps the most common heresy that has flourished about portrait taking is the one that amateurs had better not try it, and cannot hope to equal their professional brethren in that branch. I see this is given fresh expression in an address by the chairman at the opening conversazione of a new photographic club in Glasgow (a club, by the way, originated and run in connection with a photographic column in the *Glasgow Evening Times* newspaper). This gentleman, Bailie Primrose, ventures the usual word of advice to the amateurs that "they must not hope to compete with professionals with all the adventitious aids which they have at their command." May I say that this is all moonshine! The only portraiture done by professionals which, in an art sense, is of any interest or value is almost always done by them in their capacity of true amateur. God forbid that any amateur should ever set himself to compete with his trade professional brother who has to turn out the usual commercial article, which is the same monotonous,

characterless, thoughtless thing all the world over, in our big capitals as in provincial towns. If any other proof than simple inspection of a single example were needed, this regularity, running through all the studios of the world, would write down the article as dead and machine made. The studio methods are a snare and a delusion. Are not our friends or our models beautiful enough in the ordinary lighting in which we see them? With their usual surroundings, in their ordinary habitat, can we not get glimpses of their character and seize on the expression with equal or even greater likelihood of naturalness than in glass houses wherein people do not live? Some of the strongest and most characteristic portraiture has been the work of amateurs. There are not a dozen in the world, both amateur and professional, who to our knowledge have exhibited artistic portrait and figure work. In this connection I am delighted to see in the pages of *Photography* here, a note about some highly appreciated portrait work produced by Mr. Horace L. Bundy, in the States, and I hope we shall have the further pleasure of seeing some of this gentleman's studies on this side.

**GAS CYLINDERS.**—Reverting to the recent fatal explosion of a gas cylinder, Mr. F. H. Wenham again points out that the most probable cause of the explosion of oxygen cylinders is a kind of spontaneous ignition, by the combination of the oxygen under pressure with the iron of the cylinder. There is no instance on record of a hydrogen cylinder exploding under similar pressure; but, with oxygen, any such igniting influence, once set up, would spread rapidly and soon cause an immense increase in the volume of the gas. Simply a projecting point of iron in the cylinder might originate the combustion. Mr. Wenham suggests a method of testing his assumptions, and points to a remedy in the application of a protective coating of oxide to the interior of the cylinders. He says: "The operation might be very easily effected during the time that the cylinder is being annealed, and while at a dull red heat a jet of steam could be directed into the neck or orifice. This would form a dense coating of black dentoxide on every exposed part and particle of the iron, and would be, in fact, 'Barff's Rustless Iron,' on which oxygen has no further action."

**NEW STEREOSCOPIC METHOD.**—Mr. Theodore Brown has devised a new and ingenious method by which stereoscopic pictures may be taken in an ordinary single camera instead of by means of the usual twin lens divided camera. The invention consists in using a pair of mirrors inclined slightly to each other in such a manner as to suitably reflect two images of the view to be treated. The camera is not pointed direct at the subject to be treated, but towards this pair of mirrors, which are fixed by an attachment to the camera baseboard so as to reflect the

images towards the camera. These two reflected images are received through the one lens upon the sensitive plate in such a manner that each image takes up its proper half of the plate without overlapping, the usual transposition of the left and right being effected without the need for after cutting of the prints. The *British Journal of Photography* of May 3d gives an excellent account of Mr. Brown's device, and points out some objections to the method, the chief one being the reversal (with glass plates and ordinary silver printing) of the subject in nature as regards right and left. The plan, however, seems to be a perfectly practicable one.

**VULCANIZING WOOD.**—The same journal refers to the possible utility to camera makers of the "Haskinized" or "Vulcanized" wood which is now being put before the public. The method of seasoning wood by time and exposure to air, Mr. Haskin holds to be wrong in theory and very defective in practice. Instead of drying the wood, heat and air pressure are aid to be used to retain in the green wood all the life preserving and antiseptic properties of the sap, "the albuminous, glutinous, resinous, and oleaginous compounds being coagulated in the pores of the wood, making it impervious to atmospheric changes, unshrinkable, easily worked and practically indestructible." It is claimed that for cabinet work vulcanized timber is unsurpassable, and that any shade of color can be produced at will. If all this be true, such a material ought to be a great boon to camera manufacturers.

**FRENA MAGNIFIERS** —Under this name Messrs. Beck, the opticians, designate a method of focussing which they apply to their hand camera known as the Frena. Instead of focussing by means of rackwork variations for points nearer than the limit of sharpness given by the lens alone, Messrs. Beck supply a series of thin simple lenses which can be readily inserted, and so act as focal adapters and give respectively sharp images of objects at varying distances down as near as from four to six feet. These lenses have been in use for some time and are not now a new introduction, but it is a point worthy of attention by any mechanically skillful readers who may be desirous of giving greater range and power to their "fixed focus" cameras.

I think I have seen the same device previously on some foreign made cameras, but probably no one would be particularly set upon claiming precedence as to the application of the old idea to fixed focus hand-cameras.

**FADING OF SILVER PRINTS.**—I think I have omitted previously to report the results of some experiments carried out some time ago by Messrs. Haddon & Grundy as to "*The Cause of the Fading of Albumen Prints.*" Practically and in brief it amounts to this; that in a finished print which

has gone most carefully through all the processes, there is left in the *whites* of such a print sufficient unfixable silver salt to admit (under the proper preparation) of a strong print being made upon the paper. This ought to prove another blow against the use of albumenized silver paper, if such were needed.

As photography becomes of greater recognized value, permanence is made a matter of greater importance by practitioners as well as by customers.

"ART TALK BY A VETERAN PHOTOGRAPHER."—Under this heading I notice a report in our journals of a paper read by Mr. Leon Van Loo to the Cincinnati Camera Club, and I refer to it just to recommend my readers to give the paper attention, if it is available to them. The ring of nature throughout the discourse is of the right sort. It may be advisable to remember that it is easy to overdo the translation of nature's moods and manners into laws as guides in art, and that the pursuit of such a philosophy has no necessary relation to the studying and seizing on artistic effect, but may rather constitute a will o' the wisp. Further, a very different reading of Millet's "Angelus," might be given from that read into it by Mr. Van Loo, if it were advisable to read any literary, or religious meaning into it at all, rather than to enjoy its influence without analysis. But I started to recommend, not to criticize, and I hope the paper appears in our American contemporaries for easy reference by my readers.

## The Stereo-Photochromoscope.\*

BY F. E. IVES.



THE original Ives photochromoscope, although only a monocular instrument, contained seven reflectors, six lenses, and three color screens—sixteen optical working parts altogether. The new stereo-photochromoscope has only six optical working parts—four pieces of colored glass and two lenses.

Such simplification of the photochromoscope was made possible only by adopting chromograms, which are made in sections, on different pieces of glass; and I rejected that plan as unsatisfactory until it occurred to me that the sections might be hinged together and used in such a way as to be almost as convenient to handle as the one-piece chromogram. In order, however, to change such chromograms quickly, an instrument had to be devised which would permit the sections to be

\* A communication to the Photographic Society of Philadelphia, February 13, 1896.

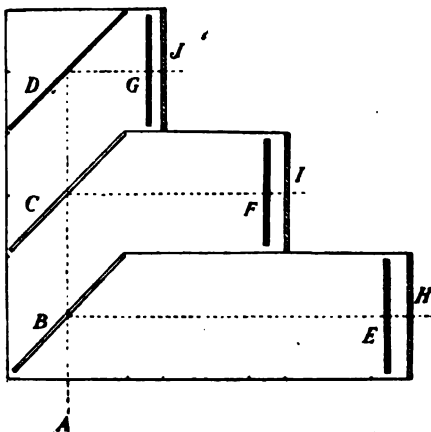


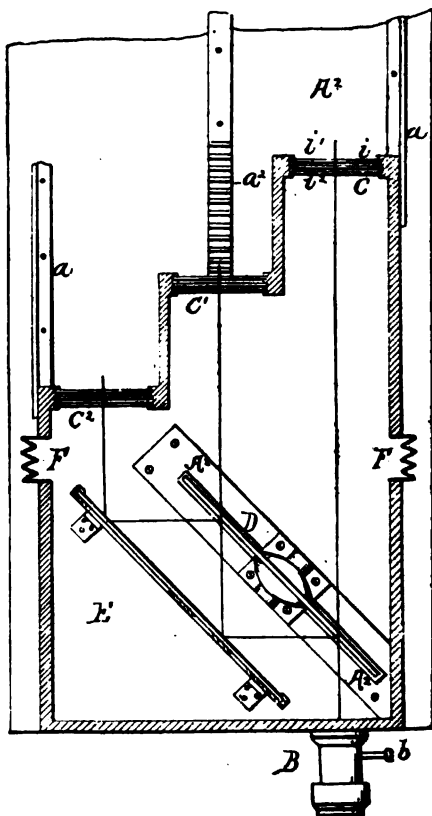
FIG. 1.

glass arranged as shown in the vertical section, Fig. 1 : A is the position of the eye; B, C, clear plain-glass reflectors; D, silvered mirror; E, F, G, colored glasses; H, I, J, photographic positives.

It was not claimed for this arrangement that it was of any use except as an experimental demonstration, because the plane glasses gave double reflections, which destroyed the definition of the images. Some years after, Antoine Hippolyte Cros sought to find a substitute for the plane glasses which should be free from this defect; and by means of a rapidly revolving wheel having four plane silvered and two clear open sectors in combination with another plane silver mirror, actually blended three images without any doubling of outline. The arrangement is shown in the vertical section, Fig. 2. At one instant of time the light passed directly from C to the eye, through an open sec-

ropped into their respective places by a single movement of the hand, like the one-piece chromogram in the older photochromoscope. This I accomplished by making some important improvements upon a crude suggestion thrown out by Charles Cros nearly twenty years ago. I have lost the reference to Cros' publication, but if my memory serves me well, it was a suggestion to blend three colored images by the use of one mirror and two pieces of plane

FIG. 2.



tor; at the next, light from  $C^2$  passed through an open sector to the mirror, E, then on to a silvered sector, and from that to the eye; at the next, light passed from  $C^3$  to the mirror, E, then to a silvered sector, then back to the mirror, E, then on to another silvered sector, and from that to the eye. The wheel (Fig. 3) was put into motion by means of a wound-up cord, as for spinning a top. Such an instrument would necessarily be large, clumsy, costly, and troublesome, and I do not know that Cros ever even showed one in public; but it is of interest as being the first suggestion of an instrument even theoretically capable of producing such a blending of the images as it was intended for.

What Antoine Hippolyte Cros sought to do for the step form of photochromoscope by means of his revolving wheel, I accomplished far more perfectly by a means which in comparison is ridiculously simple, namely, by substituting colored glass reflectors for the ordinary plane glasses used by Charles Cros. As I pointed out in a paper read before the Society of Arts in London, in May, 1893, the images will not appear doubled if the blue picture is reflected from a yellow glass and the red picture from a cyan-blue glass. But not even the folding chromogram and the

colored glass reflectors were sufficient improvement to make of it a satisfactory working instrument, because the perpendicular position of the steps was unsuitable for the ready insertion of the folding chromogram, and also necessitated either a duplication of parts or enormous increase of size to make it stereoscopic. The arrangement was also very unfavorable for securing suitable illumination. All of these defects I remedied by making what was formerly the base of the instrument one of its sides

FIG. 3.

FIG. 4.

and hinging it to a baseboard or tray, so that it could be readily inclined to the most favorable angle for illumination and easy vision. Still another defect remained; the image, owing to its distance from the eye and the small angle subtended, appeared much smaller than that in the original Ives' photochromoscope. This defect was remedied by changing it to a two-step instrument, in which the first image is not reflected at all, but seen direct through the two colored glasses which reflect the other images. Such an instrument is shown in Fig. 4, and the folding chromogram in Fig. 5. A sectional view of this instrument is shown in my United States patent specification, filed July 3, 1894, and issued December 18th. Owing partly to the shorter distance from the eye to the chromogram, and partly to the fact that a more convex eye lens is required for distinct vision, the image has apparently four times the area of that seen in the three-step instrument, and the objects appear "life-size."

The chromograms unfold automatically as they are picked up, and fold up again as they are laid down, by giving the hand a slight to-and-fro motion. They are dropped into place in the photochromoscope by a single motion of the two hands and lifted out by a single motion of one hand. The negatives and positives are made, in the first place, on a single 5 x 7 plate, the positives being cut twice in two for mounting on the hinged cardboard frames.

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### A NEW PROCESS MAKING POSSIBLE THE PRINTING OF 100,000 PHOTOGRAPHS A DAY.

An entirely new process, protected by patents here and abroad, is used in printing the photographs that appear in the *Celebrities Monthly*, and by it not long ago 100,000 photographs were printed in one day. The process consists of automatically printing direct from photographic negatives by artificial light on sensitized paper in a continuous roll. The paper is fed under the negatives in a machine that switches the lights on and off for the consecutive exposures, and then carries the paper thus printed to a series of tanks containing the proper chemicals to develop the latent image. Of course, the most careful and scientific supervision is imperative for these delicate chemical operations, and the highest ability of the experienced photographer is essential to obtain the best results, since any omission or neglect is multiplied indefinitely.

The paper used is coated with a gelatine bromide of silver emulsion, and the resultant photographs are excellent bromide prints and absolutely uniform. The automatic features of this method make practical the introduction of photographs in a periodical. Apart from the fact that the cost of photographs made by the ordinary method has hitherto been prohibitive, the impossibility of producing a sufficient number for a large regular edition of a magazine has shut out from practical use this effective means of illustrating.

### Cloud Photography.

THE difficulties in obtaining good cloud effects in pictures are very well known to photographers. To the majority a good photo with a fine cloudy sky is an exception, not to say an accident. We think it is not generally known that the Weather Bureau, at Washington, is constantly engaged in making meteorological photographs, cloud photography having received much attention.

We give a half-tone engraving of a cloud photograph taken by Mr. A. J. Henry, of the Weather Bureau. This print was made from a single negative taken with one exposure, and it is through the courtesy of Mr. Henry and Mr. McAdie, of this Bureau, that we are enabled to give our readers the secret of this remarkable effect.

The picture is taken through a monochromatic screen. The one found most effective is that formed of a saturated solution of bichromate of potash inclosed in a plate glass cell having parallel sides. The construction of this cell is shown in the second engraving, in which *a a* are squares of plate glass and *b* is a ring cut from a glass tube and ground to render its edges parallel and smooth. One side of the ring is perforated and furnished with a stopper. The ring is cemented between the two glass plates with balsam of fir or other suitable cement. The saturated solution of bichromate of potash is introduced through the perforation, and

the cell thus made is inserted in a piece of cork, *c*, which fits over the collar of the camera lens. The proper thickness for the cell is 2 shown in the engraving; the diameter will vary with the size and the angle of the lens. The exposure for the negative from which our illustration was taken was four seconds. A simple device useful for amateur and professional photographers. — *Scientific American*.





A CLOUD PHOTOGRAPH.

## Photography.\*

### WHAT ARE ITS POSSIBILITIES IN THE ART FIELD COMPARED WITH THOSE OF PAINTING?

BY LEON VAN LOO.

LADIES AND GENTLEMEN: I was requested by the members of the Camera Club to deliver an informal talk on "Posing in Portraiture." Deeming this subject too limited in scope to be of general use to the artist or of much interest to those who are not knights of the camera, but who have honored me with their presence here this evening, I have thought best to select as a theme for this lecture "Photography: What Are Its Possibilities in the Art Field Compared With Those of Painting?" To answer this question thoroughly, it will be necessary to examine critically, deliberately, the laws that govern and underlie all art. These laws are simply the voices of nature, as expressed in her varied forms, lines and colors. Repose, rest, indolence, peace, we find suggested by all horizontal lines or masses; the placid waters of pond, lake or sea; the plains, the prairie, the desert. All living creatures seeking rest lie down. The dead of all nations, of all times, are laid in their last resting place in horizontal position. The artificial lakes in our cemeteries, upon whose glassy surface are reflected the neighboring tombs, suggest rest, peace. Strength, endurance, dignity, nobility, immortality, are very forcibly expressed by the vertical lines and forms, as seen in the stately pine, the Greek column, the church spire, the shaft that marks the graves of the departed. Action, motion, virility, restlessness, aggression, force, violence, are clearly told in all lines and forms of acute or right angular shape. When the storm rules supreme, the smooth and shining surface of the waters is changed into angular waves; the giant trees, the saplings, the weeds, the vines and the grasses, all bend their heads, and assume the acute angles of action. Nature, in all her phases, passive or active, in whatever mood we may see her, always represents one grand, unbroken harmony.

Mr. Van Loo then demonstrated with a living model a few of the points he desired to illustrate. Continuing, he said:

These facts as stated and demonstrated, are not my individual interpretations; nor are they the conventional opinions of any one class, or set of men, artists or critics. They are simply the meanings of nature, expressed through the manifold forms, lines and colors, found in the whole universe. From these sources the poet painter draws his inspiration—with this language all true art works must be composed—through this language only can they be understood, by the light of this language alone must they be judged. The general application of this knowledge in the affairs of our daily life will do much to better and beautify our surroundings. It will teach us to avoid the senseless overcrowding of our homes with meaningless objects; especially in America, the parlors of the wealthy are, as a rule, too much filled with costly but inharmonious forms; they seem confused, oppressive; they are lacking in repose, dignity, refinement; they suggest too much the bric-a-brac shop. This knowledge will prevent our architects from putting miniature towers, in the shape of pepper boxes, or pilot houses, on every dwelling house they build. Towers are the appropriate parts of castles, surrounded by extensive grounds, or of large structures or public buildings. Had a little of this knowledge been distributed in this city, it would have prevented giving to the splendid statue of President Garfield, by Charles

\* Paper read before the Cincinnati Camera Club, December 10, 1894.

Niehaus, an unsightly tombstone for a base. This same knowledge will guide women in selecting the right colors and proper shapes for all garments that adorn the body, or the many and often fantastic creations that cover their heads. Dress should be in perfect harmony with the size, shape, age, complexion, temperament, intelligence and station in life of the wearer. It should mark the difference between mistress and maid, matron and miss, and should always very distinctly separate Penelope from Phryne. I trust the time is not far distant when the language of nature will be taught in all our universities, public or private schools and art academies. I know of no branch of learning that will have so potent an influence for good upon all classes. It teaches the eternal fitness of things. It brings gentleness, good manners and refinement, while it beautifies and largely enhances the value of all material it shapes or adorns. Jules Claretie tells the story of a farmer and an artist, before a small canvas, by Rosa Bonheur. The subject, "A Cow." The price asked for the painting seven thousand dollars. The rustic thought so large a sum for a picture of a single cow was simply preposterous. "Why," said he, "I have bought the finest living cow I ever saw for sixty dollars." "True," replied the artist, "but you forget this great difference; your animal will soon die and be forgotten: this cow is immortal." Art, according to Zola, is "nature seen through the medium of a temperament." This is true and easy of demonstration.

About the year 1840, five great landscape painters, the founders of the French modern school, lived in and about Paris—Barbezon, Fontainebleau, Ville d'Avray. They all painted the same localities, they all lived under the same influences; they often met; some were intimate friends; yet their works, in color, composition, treatment or subject, in no manner or form at all resembled each other. Rousseau painted the intellectual; Daubigny loved the simple—the river Seine and her charming banks; Diaz, the forest; Corot, the poetic, the mysterious; Dupre, the virility of sunlight in color and form. These men of genius saw the same nature, but each selected for illustration from her unlimited sources the subjects most congenial to his mind, and gave them expression through the medium of his temperament. "Painting," said Fromentin, "is the art of expressing the invisible through the visible." The full meaning of this sentence will be made apparent to all by calling attention to a few well-known works. Let us look at Munkacsy's "Christ before Pilate." (The limited time will not permit my taking up more than one figure out of this splendid group.) I will select for my purpose, not the founder of our Christian faith—that exquisite type of Hebrew mold; that noble, intellectual face—nor shall I choose the severe and learned judge; these tell the invisible too plainly to claim my attention. I will take the warrior—"the visible,"—a full length standing figure in the foreground; in his hands a spear; his back to the beholder; his looks toward the gathered crowd. He who reads the language of art, sees in that one soldier, one spear, order, law, authority; the military power of Rome. As a second illustration, let us see what Jean Francois Millet has so beautifully told in his "Angelus." "The visible:" a field of labor; in the foreground two peasants; a few implements of toil; in the distance a church spire; over all a glorious sky, in colors of idealistic beauty. "The invisible:" Faith, the Christian's religion, hope of a better life to come, the reward for sufferings on earth, immortality. This painting, which at the Secretan sale in Paris a few years ago brought over one hundred thousand dollars, the highest price ever paid for a modern work of similar size, represents a very marked period of evolution in art. This same subject, from the early dawn of painting, has been treated too often from a very cruel, intensely realistic, common standpoint, but

always with either the figure of Christ, the Holy Family, the Apostles, the high priests, or the set forms of worship, etc. It was reserved for Millet, in October, 1859, leaving all tradition behind, to be the first to convey this theme through the humble, the poor, the untutored of to-day. How simple, how sincere, how profound is the faith here expressed! This condensed review tells us plainly that the "possibilities of photography in the art field" are quite limited when compared with those of "painting." Before religious or historical subjects the camera is powerless.

The greatest weakness in photography, as an art, lies in the fact that all impressions obtained through lenses are too graphically correct; they give us too much the cold, precise realism of the surface of things; too much infinitesimal and often meaningless or uninteresting details. There is a great want of depth, of breadth, of mystery, of the invisible. The inventor who will produce a lens that will reflect upon the sensitized plate the forms, the lights and shadows of objects placed before it, in broad masses, free from the present minute and often painful definition, will much enlarge the present possibilities of the camera. In genre work there are great opportunities for the amateur. The humorous, the sentimental, the varied phases of daily life are subjects which, with some knowledge of composition, some familiarity with the significance of forms, lines and angles, you can well illustrate. To begin, limit your efforts in this branch to the single figure of groups of two to four—a great number will much increase the difficulties of your task and demands the knowledge of the master to make success possible. To obtain artistic results in landscape photography is quite difficult. It is seldom that we find in nature complete and well balanced pictures. The very high standard of composition, expression, etc. we have, has been taught us by the works of illustrious painters. Yet there are great and varied opportunities in outdoor photography. Bryant has well said:

"To him who in the love of nature, holds  
Communion with her visible forms, she speaks  
A various language."

You must train the eye to see the picturesque in nature; the mind to understand the poems found in the fields, in the woods, in the waters, in the mid-day sun, in the gray mist of the early morning, or in the mysterious solitude of sombre twilight. With this end in view, study well the works of Lessing for romantic feeling; for the classic, Schirmer; the sentimental in Caspar Scheuren; for pastoral poems, Cazin; for sunlight, Geo. Innes; for dignity, Rousseau; for the forest, Diaz; for the mysterious, the poetic, Corot; for the storm on land or sea, Andreas Achenbach; for the land of sterility, the massive rocks, the arid, sandy plains, where dwells the savage, the works of our fellow townsman, Henry Farny. This brings us to photographic portraiture, where the camera finds its greatest possibilities. Here the operator has full play for showing his knowledge of art, his intelligence, his feeling. Here the subjects before him are pliable at his will. Here the forces of light and shade are at his command. Here to be successful you must be a good judge of character; your perceptive faculties must decide at a glance the dominant traits, the temperament and general characteristics of your subject, and if in pose you forcibly express these, success is assured. Do not take for models the dramatic attitudes, the twisted draperies, very effective when used by theatrical celebrities, but, when applied to men and women in private life, where the license of the stage does not extend, often becomes common, loud, and even vulgar, lacking modesty, refinement, dignity and repose.

In the studio make your patron feel at home; interest him mentally. Do not

ask him to look pleasant, to smile; these expressions may please the weak, but ill become the wise. If the sun pictures made during the last forty years do not fade, the future historian will describe us as a very happy, grinning people. When a circus rider appears, talk sawdust. When the doctor comes, speak of microbe germs; when the judge, the lawyer, make their appearance, let them do the talking. When a very homely man desires to be immortalized, tell him of the greatness of Socrates or Benjamin Butler, but don't mention the story about Voltaire, who one day, surrounded by a group of ladies at the court of Louis XV., remarked that men only had the right to be homely. "Yes, I agree with you," replied Madame Pompadour, "but you abuse the privilege." When a real handsome woman majestically walks under your skylight, be silent; the mirror has told the required story. When fall is near, and faded flowers come, the situation is a trying one, as the following facts will tell. A lady whose sixty summers and several springs had whitened her hair but failed to tarnish the rouge on her fair cheek, or remove the *poudre de riz* from her kindly face, called upon a certain photographer of this city. Arrayed in the brightest of colors, the gayest of dress, with unnumbered ornaments adorned, she appeared before the camera and said: "I have been photographed in Paris, Berlin, London, Constantinople and Chicago, but never succeeded in getting a picture that looked like me; not one that proved satisfactory to my family or friends; not one that I could recognize; not one that did me justice. Pray tell me, Mr. Tripod, what is the reason for all these failures?" The artist looked solemnly sad and replied: "Ah, madame, photography is indeed a great art, but it has not yet reached the perfection that enables it to reproduce on paper the real beauties of nature." Yes, there is a humorous side to life in the studio, but there are occasions when the possibilities of the camera bring into play philosophy, science, art, knowledge and even diplomacy.

## The Camera in Newspaper Work.

BY M. Y. BEACH.

THE hand camera, as an aid to the newspaper reporter, is an invaluable acquisition, and fast becoming almost as indispensable as a pen or pencil. As a practical newspaper man, doing field work for the *Los Angeles Times*, and the big dailies of Chicago and New York, the writer has found his camera of much use; so useful, in fact, that he seldom goes abroad without it. After experimenting with the best cameras made, he found a twelve-dollar 4 x 5 Premo so compact and efficient as to fully meet requirements. Pictures of sea-elephants, sea-lions, flying birds, of fishes, Indians, and subjects on the prairies have been taken, from which newspaper cuts have been made and the printed pictures sent among millions of readers. It costs but a few cents to get an original photograph, such as frequently lends interest to the articles they accompany. For instance, the photograph of a 32-ft. shark caught near San Diego, Cal.; that of an 1,800-lb. sun-fish, and one of a sea-elephant, an animal almost extinct, weighing three tons, lent interest to the reports describing these monsters. On every hand are subjects for the reporter's camera which are of genuine news interest. After thorough experience the camera named is commended. It may not do as fine work as a camera with a \$100 lens, but it meets requirements, and is within the reach as to price of almost every scribe.

# THE AMERICAN AMATEUR PHOTOGRAPHER.

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ALFRED STIEGLITZ.

EDITORS

F. C. BEACH.

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## Editorial Comment.

*Frontispiece.*—"Homeward Bound," by Karl Greger, of London, is a specimen of the beautiful work done by this artist. Mr. Greger started photographing about six or seven years ago, and soon made a name for himself for the delicacy and artistic feeling that all his pictures possessed. We have seen much of his work, and must say that notwithstanding the very high standard he has set for himself, his pictures are of a uniform quality, certainly the highest praise that can be bestowed upon any one. We must thank Mr. Greger for his kindness in forwarding us six of his pictures for reproduction, all of which will be reproduced in the course of the year. Naturally much of the exquisite delicacy of the originals has been lost in the reproduction. Mr. Greger is a member of the "Linked Ring."

*Summer Work.*—The season of out-door photography begins about this time, when everybody going on a summer vacation thinks it necessary to take a camera along with them. Some are careful to try their instruments before making an outing; others trust to luck. The most satisfactory way is to make trial exposures, carefully test the camera and plate holders for light leaks, and develop the pictures first; then one may be reasonably certain of success if the conditions of light and subject are observed.

We once heard of a party who, on an extensive summer tour through Europe, carried a Kodak and went through the operation of making some

three hundred exposures, working the shutter and changing the films when used up. The after manipulation of development disclosed the fact that no light impressions had been made; simply because of some defect the shutter failed to work, though there was an apparent sound that it did. This example, though probably rare, still emphasizes the fact that one cannot exercise too much care in knowing that every part of the camera is in good order before an outing is made.

In making snap-shot exposures with hand cameras, judgment should be used as regards the size of the diaphragm, speed of shutter, according to the subject to be photographed. Marine views, where much light is reflected upward by the water, should be taken with a rapid shutter and small diaphragm, while for views containing much dark foliage the conditions should be reversed, larger diaphragm and slow shutter. If cameras are used having a fixed speed of shutter and uniform sized diaphragms, the operator will be limited to the most favorable conditions of light and subject, if good results are to be expected. Generally speaking, the rollable film cameras require such conditions, as the films are not quite as rapid as the plates

If a person thus learns the capabilities of his instrument and sensitive film, the percentage of failures should be largely reduced. It is advisable to ignore the old saying that an exposure never should be made unless the sun is behind your back. Nowadays the most striking and artistic views are made with the sun nearly shining into the camera, a side light being regarded as the best. The reason is that it throws the object into relief and avoids flatness, which is sure to be seen in views with no shadows.

The subjects for summer work are too numerous to suggest. Each worker must decide for himself what he wants to illustrate, and use care and method in doing it. When possible, avoid warm, muggy weather for development manipulations. Choose a day or evening when it is comparatively cool. Much more might be said in regards to summer work, but enough is hinted at to know what should be avoided, especially by those who have had little experience.

*Keeping Qualities of One-Solution Developers.*—We have observed recently the gradual change in color of a one-solution developer, prepared in a powdered form and then dissolved in the requisite quantity of water. The main ingredients are metol, hydroquinone, sulphite of soda and probably carbonate of soda or potash. When first dissolved the solution is nearly colorless. We placed it in a bottle full to the cork. As small quantities were used from time to time in the development of negatives and slide plates and the bottle frequently opened to the air, we noticed the color of the developer gradually changed to yellow, and in about a

month and a half's time to a light red. But a most peculiar and interesting fact observed was a layer of much deeper red color, beginning from the top of the solution downward for about two inches, going to show apparently that the larger the air space increased over the solution in the bottles the more rapid the discoloration took place. On agitation, such as pouring out some of the developer, the color equalized itself in the whole solution.

As the color becomes darker, a larger amount of solution seems to be necessary in a given quantity of water to obtain the same density, than when freshly prepared.

The discoloration is due to the oxydizing action of the air in contact with the surface of the solution, which proceeds in extent according to the amount of fresh air admitted, aided somewhat by the alkali combined with the metol and hydroquinone salts. Possibly the use of a layer of oil on the top of the solution, the same as was formerly used to preserve the ferrous oxalate developer solutions, would prevent oxydizing action and maintain the solution intact. It is an experiment worth trying.

We think a metol and hydroquine developer, put up in powdered form in small bottles of the right proportions for a 3-ounce solution would be very popular, since it is quickly prepared and will develop a dozen or so of 4 x 5 plates. As a general rule, the alkali should be kept separate from the other ingredients until the developer is to be used.

*The Photography of Clouds.*—One of the most useful records of the camera is that made illustrating the varying forms of clouds and of sunset and sunrise, showing the sun partly through the clouds. On another page is a description of the apparatus used by the meteorological department of the United States Weather Bureau for the photographing of clouds. The use of a yellow screen prevents the actinic blue rays of the sky from acting as powerfully on the plate as they otherwise would, and allows the white and darker portions of the clouds to come out in greater prominence. Cloud photographs are in many instances the ones mostly admired at exhibitions and sometimes secure medals. So successful are the photographers that the print or slide is tinted by well-known processes to closely resemble the actual color of the clouds. It is a field worthy of attention during the coming summer months.

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From the Art Notes, "New York Times," May 23, 1895.—The May number of the AMERICAN AMATEUR PHOTOGRAPHER contains many delightful half-tone reproductions after photographs from life. The subjects are chosen with no little artistic feeling and nice sense of composition. Notable among these is a landscape study by L. P. Schramm. An initial letter by "A. S.," called "The Truant," is particularly happy, while "Afternoon Tea," by Miss Fitz, is an attractive grouping of two women. The publication contains much of an interesting nature to men of a photographic bent, with various articles on "Mechanical Aids to Artistic Photography," a beginner's column, and photographic society news. "The Equations of the Conjugate Foci: Their Derivatives and Their Uses," will prove light and cheerful reading, and is sure to be popular with the mass of the subscribers. (The Outing Company, Limited, 239 Fifth avenue.)



## Society News.

**Society of Amateur Photographers.**—*Regular Monthly Meeting, Tuesday Evening, May 14th.*—The meeting was called to order at 8:30, President C. C. Roumage in the chair. The minutes of the annual meeting were read and approved. The first matter of interest was an informal paper illustrated by lantern slides, by Mr. Wm. N. Jennings, of Philadelphia, on "Photographing Lightning," which proved, in his estimation, that the artists' conception of lightning, as depicted by them, was wholly wrong. He had illustrations of the earliest ideas of lightning gathered from the records of the ancients; lightning as the Western Indians sketched it; a comparison of the discharge of electricity over the surface of a dry plate, between the two terminals of a Holtz electrical machine, with the appearance of iron filings on a piece of glass or paper as arranged between the two poles of a magnet when the latter is placed under the paper, and a comparison of a heavy discharge spark from such machine with an ordinary lightning flash. A photograph of a silver dollar laid on the surface of a dry plate and illuminated by the faint discharge of electricity about it was very novel.

Other pictures represented the curious tree-like appearance of lightning, and the dark branches or black branches seen to emanate from the side of the stroke. Mr. Jennings stated that when the picture was made he observed, at the time of the flash, these branches had the appearance of a deep orange color, which accounts for the phenomenon of their taking black on the sensitive plate. A peculiar phase of a single flash, separating into two branches going in the same direction downward, the path of one being further off than the other, on account of the lateral action of the wind, was shown. There were views of veritable thunderbolts, where two separate flashes run into each other. Also views of flashes shooting upward from the earth. He showed a comparison between a sheet of glass cracked by heat with the form of lightning flash, and closed the series by showing a view of a flash taken from the rear end of a railway train in motion, which had the appearance of a broad ribbon of light—very remarkable. He proved that it could not have been due to the local movement of the camera, but gave as a possible explanation that it might have been produced because of a single stroke separating it into two parallel branches near together, one nearly back of the other, which would make the light from each merge on the plate and give the effect of a broad ribbon of light.

The views were very instructive, in showing the many phases of lightning and in correcting false ideas on the subject.

Mr. Roumage thanked Mr. Jennings on behalf of the Society for his entertaining talk.

Mr. E. Wood Perry exhibited an ingenious yet simple tripod head clutch, intended to replace the usual tripod screw for fastening the camera to the tripod. There are two levers eccentrically fixed, which bind the shank of a special stud, secured by screws, to the bottom of the camera. The stud of the camera is slipped in sideways through a slot in the tripod plate, then the leaves are brought together, which holds the stud rigidly. It is very simple and rapid in operation, and favorably regarded.

The President stated that a selection of two hundred prints from nearly a thousand sent in to the *Truth* competition were hung on the walls, and that a member of the Society, Mr. Chas. I. Berg, was awarded the first prize. The selection sent was by Mr. Noel, of the *Truth* Company.

Dr. John H. Janeway, Chairman of the Committee on Progress of Science and Art, was then called upon and read a lengthy concluding paper on the "History of Photography by Artificial Illumination." It was devoted mainly to the use of the electric light. There were two kinds, incandescent and arc light. He explained the history of generation of electricity, stating that batteries were first used, but were not practical or economical.

Pixley was the first to recommend or suggest the use of a dynamo and not Wild. The next matter was regulators to control the consumption of the carbons and regulate the length of the arc. Then there was the arc electric candle. In 1839 he thought it probable that Foucault made Daguerrotypes by the electric light, using a powerful Grove battery. In 1876 Mr. Kurtz, of this city, had a series of arc lights in a row, and placing the subject and camera on a rotating platform was able to soften the shadows to a remarkable degree.

Vandewyde of London, used an electric light of 4,000 candle power in a parabolic reflector fixed on a swinging fork, and arranged to throw the light of 4,000 candle power upward against a reflecting screen. The light can be moved to illuminate different screens during exposure.

Adamson used forty-eight 16 candle power incandescent lamps arranged in a parabolic reflector lined with a white coating. The whiteness of the light depended on the pressure of the current. It was noiseless, and though somewhat slower in action than the arc light, had some advantages which that did not possess.

Since then further discoveries have been made, and the employment of various reflectors and screens has had the effect of softening the brilliant arc light, avoiding the glare which was formerly one of its objections.

The paper was accepted, and ordered placed on file.

Mr. Murray, in discussing the paper, remarked that while it contained much information, it was too lengthy for the average member to digest, and he thought some way should be devised to have a synopsis of such papers read, and the papers themselves printed in full in the journal of the Society, and thus be accessible to each member.

Dr. Janeway, in reply, apologized for its length by saying that he was obliged to be absent at a previous meeting, and it was so near the end of the season he desired to have this the last paper on the subject.

Mr. G. D. Milburn, of Rochester, N. Y., exhibited his improved 5 x 7 Corona hand camera. There was a special hood on the finder and a metal post at one corner, which allowed the back and side to be easily accessible. The focussing arrangements were the same as heretofore. He also showed a model of his 4 x 5 Corona camera, which has a bed and holds plates. Inside the bellows is a lazy tong arrangement, which holds the lens front board rigid, when the camera is extended. It is very light and compact.

Mr. F. C. Beach exhibited a model of the new Eastman Bullet Camera, taking pictures on a film 3 inches square, protected from light in the same way as the Bullseye camera film is, by a strip of black paper. The interior box slides out from the outer case for loading. The film arrangement is the usual Eastman Roll Holder, but the shutter is quite unique, simple and new. It is set by moving the pressure

EASTMAN BULLET CAMERA.

release pin laterally a short distance, then by pressing downward on the pin it is released. Time exposure is made by moving the pin sideways half way through its arc of travel, which exposes the lens, then by pressure downward the shutter is closed. Besides all this there is a supplementary protecting shutter traveling over the surface of the shutter proper, which covers the lens when setting the shutter and moves back out of the way after the shutter is set. By this construction the manipulation of the shutter is greatly simplified, the usual catgut string being avoided, and the chance of mistake or error being reduced. The camera is very light and easily carried about.

The meeting then adjourned.

*Test Night, Wednesday Evening, May 15th.*—On this evening the Interchange slides of the Orange and Newark Camera Clubs were shown, and Mr. Ferdinand Stark gave a demonstration on Carbon Printing, which was very successful, and interested several members.

*Test Night, Wednesday Evening, May 22d.*—The Interchange slides tested at this time were by the Columbia Camera Club, Astoria, Oregon; Memphis Camera Club and New Orleans Camera Club; the Columbia Club supplied copious notes of the various objects of interest illustrated.

*Exhibition of Lantern Slides, Friday Evening, May 24th.*—The set of slides shown by the Photographic Society of Philadelphia, was preceded by work of members of the Society. This included one or two pictures of a colt by F. C. Beach, good street views, by Mr. Montant, fine instantaneous photographs by Mr. Faulkner, made with a focal plane shutter, and several views of a fete of roses at Los Angeles, Cal., by Mr. S. C. Briggs, which were interesting in showing the Chinese method of decorating themselves in public processions.

The Philadelphia set was composed of 104 slides made by seventeen members; it was somewhat monotonous in style of pictures, but instructive in illustrating scenery in different parts of the world. Mr. Wm. H. Rau had excellent views of the new U. S. Cruisers *Columbia* and *Minneapolis*. Pictures of the mountain scenery along the Canadian Pacific Railway, by Geo. and Wm. S. Vaux, Jr., were interesting. Mr. C. R. Pancoast's "Barnum, the Children's Friend" was novel, of a poster on the wall, with a group of children looking on. He had also a view of "A Corner of Old Newgate Prison," the "Village Clock, at Sharon, Conn.," and a remarkably soft clear slide of the historical "Gate to Putnam Park, Redding, Conn."

Dr. Charles L. Mitchell contributed a large quota, including several interesting pictures of Norway, Fountain's Abbey, Canterbury Cathedral, England, and Holland, including a pretty view entitled, "Sunset on the Zuyder Zee." "The Ford," by H. H. Furniss, Jr., was specially good, and Mr. Pancoast's "First Touch of Winter" was very delicate in its rendering of snow. Mr. H. Parker Rolfe had a set of excellent slides illustrating the game of cricket at Haverford, Pa.

Mr. John G. Bullock's genre study, "Ready About, Helm is Lee," and "Pet of the Herd," were two interesting slides. There were instructive views in the Hawaiian Islands, Holland, the Rhine, flower and coral studies, by Dr. Benj. Sharp.

Mr. W. N. Jennings contributed several amusing street scenes in London, and a complete set of views showing the working of the new London Tower Bridge. The launch of the new American steamship *St. Louis* was well depicted by Mr. Joseph H. Burroughs.

There were also characteristic and well taken views of Normandy, and tree studies, by Mr. A. Clements; "Cripple Creek and Miners' Settlements," by Mr. Henry

Troth; a character study, entitled "A Begging Mic Mac Squaw, Halifax, N. S.," by Mr. C. Emile Ronne, and a very choice, pretty snow scene, called "After the Snow—Closed for Travel," by J. C. Roop. Mr. W. E. Johnson acted as lecturer at the screen, and Mr. F. M. Hale and Mr. Harry Shoen operated the lantern. Altogether, the exhibition was well liked, and showed the Philadelphia Society a hard one to excel in the general average of excellence of its technique.

*Illustrated Lecture, Friday Evening, May 31st.*—"The Shakespeare Country" was the title of a new illustrated lecture given before the Society on this evening by Mrs. Catharine Weed Ward, a member of the Society, residing now in London. For the past year or more Mrs. Ward has been engaged in securing a series of new photographs, intended to illustrate many of the places at and near Stratford on the Avon, where Shakespeare lived.

It is proposed that the views and pictures be used in the illustration of a new book on Shakespeare, by herself, to be published next year. Mrs. Ward began the lecture with illustrations of the signatures of Shakespeare and Queen Elizabeth, loaned her by the present earl of Warwick castle; these she had copied in there with the camera, including the stained appearance of the paper as well as the ink. The signatures and tracings of them were very curious and interesting. The other views illustrated a "Tour of the Town"; A Walk along the Avon; The Weir Brake; The Mill Weir; Avonbank; Shakespeare's Ancestry; Shakespeare Hall, Rowington; John Shakespeare and Snitterfield; Mary Arden and Wilmcote (including the Arden House); Clopton House and the Gunpowder Plot; John Shakespeare's House in Henley Street; The Poet's Birthplace (several views, interior and exterior); Shakespeare's Boyhood; The Grammar School, Guild Hall and Guild Chapel; Scenes at Charlecote Park (including an excellent exterior of Charlecote Mansion); Billesley Hall and Church; Anne Hathaway's Cottage (several views); Luddington and the Evidence of Shakespeare's Marriage; The New Place Museum and Gardens; Shakespeare's Relics; The Close of Shakespeare's Life, several views of Trinity Church; The Memorial Library and Museum (several views); Portraits and Busts, authentic and otherwise; The American Fountain; Washington Irving's Room, and several views of the newly discovered Davenant bust of Shakespeare, owned formerly by the Earl of Davenant, a godson of Shakespeare, and supposed to have been made thirty years after Shakespeare's death. This was described as by far the most life-like bust ever made of Shakespeare, and a comparison of a profile of it with the profile of the death mask was shown, there being a striking resemblance. Mrs. Ward's interiors of the historical places were remarkably good and well chosen.

The Shakespeare Trust, as she called the association formed to preserve Shakespeare's relics, generally has two women living on the premises of the respective buildings, and no fire or lamps are permitted. In one house she was particularly anxious to secure an interior showing a hallway and clock, and asked the janitress if she had a lamp; the woman replied that she had one up stairs and would get it. Mrs. Ward said she had a lamp also which she brought with her, but the janitress was doubtful and asked her if she had brought oil for it, to which Mrs. Ward replied in the affirmative; as soon as the janitress had gone up stairs and closed the door behind her, Mrs. Ward set off her magnesium lamp and secured the picture she desired. As the janitress returned coming down stairs with the lamp, she remarked that she never could understand how so much dust could enter the house. The views as a whole were well selected and gave an excellent idea, different from what is generally seen, of the streets, buildings and interiors relating to

Shakespeare. Mrs. Ward spoke in an easy, entertaining manner, and though the night was excessively warm for the season, was greeted by a large and appreciative audience. The President, Mr. C. C. Roumage, tendered her the thanks of the Society in a few appropriate words. After the lecture she was welcomed by several of the older members who knew her as Catharine Weed Barnes, and were pleased to note her improved health since her sojourn in England.

Her knowledge of photography has stood her in good stead in getting valuable and interesting pictures of historical places.

**Newark (N.J.) Camera Club.**—At the annual meeting of the Club, held in April, the following officers were elected: President, Wm. Archibald; Vice-President and Secretary, D. S. Plumb; Treasurer, J. M. Foote. Executive Committee: P. L. V. Thierry, H. W. Smith, A. C. Munn, W. A. Halsey, F. S. Olds, F. A. Shuetz, Miles l'Anson, Col. Clark, A. Van Winkle. The Club has moved into its new quarters in the Columbian Building, 224 and 226 Market street.

**Lawrence (Mass.) Camera Club.**—At the annual meeting of the Club, held on April 3d, the following officers were elected: President, John Lord; Vice-Presidents; Caleb Saunders, J. H. Greer; Treasurer, Carl H. Graf; Secretary, R. A. Hale, Librarian, Miss Carrie J. Pinque. Directors: Miss Mabel F. Noyes, Mrs. E. Braithwaite, Mr. G. C. Cannon.

The Club now numbers about thirty members, and has rooms well fitted up—dark room, enlarging, etc.

**Postal Photographic Club.**—On April 17th the Secretary, Mr. F. E. Fairbanks, of Fitchburg, Mass., sent out a list, with addresses, of the thirty-eight members of the Club, and the May album, which contained seventy-eight prints. The Club appears to have grown to twice the size in membership it formerly had, under the systematic methods of carrying it on introduced by Mr. Fairbanks. The following are the hints to members: Please forward Albums *promptly*. Please send in prints as soon after you are notified that your quota is exhausted, as you can. Please make good use of the Note Books. Those desirous of sharing the benefits of this good organization, should address Mr. Fairbanks, as above.

**Brooklyn Academy of Photography.**—The fifty-third lantern exhibition was held by the members of the Academy on the evening of April 10th, at the Art Association Hall. The exhibition was divided into four series, out-doors, indoors, afloat and at home. Between each series a good orchestra rendered fine music. President Merrit explained the purposes of these exhibitions, and then introduced Mr. H. B. Fullerton, who presided acceptably at the screen, in place of Mr. Frank La Mana, who usually does it, but was obliged to be away. The outdoors series covered a variety of landscapes, views in Mexico, New Jersey, and other places. The At Home Series, or Brooklyn as She Is, was explained by Dr. H. M. Lewis. Among them was a fine view of Brooklyn Bridge, the City Hall building before and after the fire, Brooklyn Italian colony, the Gowanus Canal, Kings County Elevated Road, Soldiers and Sailors' Arch. The afloat talk was given by Mr. Wm. Arnold, and comprised views of several yachts and yacht races in New York Harbor and on Long Island Sound. The Indoors Series was conducted by Mr. Edward H. Walker; they included views of interiors of old Colonial mansions, church interiors. flash light work, home interiors and a number of views of flowers taken upon non-halation, and orthochromatic plates. The exhibition as a whole was highly successful and received great applause at its conclusion.

**Photographical Section of the American Institute.**—On April 2d Mr. Frederick E. Ives, of Philadelphia, described and illustrated his method for the "Reproduction of Colors by Photography," showing several beautiful effects on the screen, and in his new photochromoscope. Mr. Ives repeated this lecture on April 16th, before the New York Academy of Sciences and Museum of Natural History, at the museum in Central Park.

### THE NATIONAL AMATEUR PHOTOGRAPHIC EXHIBITION.

The exhibition is to be held in Washington, D. C., July 1st, 2d and 3d, in the Light Infantry Armory, under the auspices of the National Camera Club. There are twenty different prizes, a diamond prize, gold and silver medals in eight different classes, and thirteen special prizes, nine of which are to be awarded by manufacturers of photographic goods. The judges' names have not been announced, but they will be the day before the exhibition. Attention is called to the many prizes offered by manufacturers and the National Camera Club. Amateurs throughout the United States are invited to compete for prizes offered. The exhibition is to be devoted entirely to the promotion and interest of the amateur photographer. The Club has spared no pains to please everyone, and is satisfied that every competitor who has a meritorious exhibit will be fully rewarded for his efforts and labor.

**Rules and Regulations.**—All prize pictures to become the property of the National Camera Club. No exhibits to be removed from building until after the close of exhibition. No exhibits to occupy more than four feet square. All exhibits must be sent prepaid and shipped so as to reach exhibiting room by June 29th, 1895. Apply to the Secretary for entry blank and exhibitor's ticket—fee, one dollar (\$1.00).

Manufacturers of photographic goods and professional photographers cannot compete for prizes. All must have exhibitor's ticket and entry blank, said blank to be filled out and securely fastened to exhibit.

Club members wishing to compete for special club prize must mark their names and name of club distinctly, so that same can be placed in club's exhibit. Clubs competing for special club prize must not have less than ten (10) exhibits.

All exhibits must be shipped in care of the Secretary, B. M. Clinedinst, Jr., Light Infantry Armory, Washington, D. C.

The officers and committee of the Club are : John L. Waggaman, President ; W. S. McLeod, Vice-President ; B. M. Clinedinst, Jr., Secretary and Treasurer.

Executive Committee : Mr. Charley Fountain, Mr. W. S. McLeod, Mr. Clark Waggaman, Prof. A. V. Holmes.

Ladies Committee : Miss Mina Fountain, Miss Dollie Young, Miss Mary Campbell, Miss Mazie Fountain.

The Club headquarters are at 1207 F street, N. W., Washington, D. C., where the Secretary should be addressed for application blanks, etc.

**Our Prize Set of Lantern Slides.**—During the month of May the prize set of slides were exhibited by Harvard Camera Club, Cambridge, Mass., the Lawrence, (Mass.), Camera Club, and the Newark, (N. J.), Camera Club, and were highly appreciated by each. Subscribers and other clubs who would like the use of these slides should send their requests to the editors.

## Explosion of an Oxygen Gas Cylinder.

OUR English contemporaries have all more or less given accounts of a singular explosion of a high pressure oxygen gas cylinder which occurred about the middle of March at the Fenchurch street station, in London, and which is quite mysterious as to the actual cause. It was a comparatively new cylinder, made by a well-known house in Glasgow, Scotland, Messrs. Stuart & Clydesdale, and had been used but three or four times prior to the explosion. It had been charged with oxygen gas made from chlorate of potash to a pressure of 1,800 lbs. to the square inch. It was one of the smallest cylinders, carrying about 12 ft. of gas. The party carrying it went into the station, sat on a settee on the platform, holding the cylinder between his left arm and side. Soon a terrific explosion occurred, the man was thrown down and injured so that he died almost immediately. Fire is said to have been seen at the time of the explosion, but the evidence is not clear on that point. A coroner's inquest followed, and many interesting facts were brought out. The experts could not account for the explosion except on the theory of mixed gases or of grease or oil in the cylinder. It was shown the usual precautions in regard to charging had been taken. Perhaps the clearest scientific evidence is that of Dr. A. Dupré, the government analyst, who was the last witness. We quote his remarks from *Photography*, in which appears a full report of the inquest. Mr. J. B. Spurge is the party who had charge of filling the cylinders, as foreman for Mr. Clarkson, who supplied the filled cylinders to Mr. Newton, of Newton & Co., opticians. The report is as follows:

I have visited the works of Mr. Clarkson, at which the gas was manufactured and compressed, examined the materials and apparatus used in the preparation of the oxygen, and inspected the machinery employed for its compression. I have also carefully examined and tested the exploded cylinder.

**PREPARATION OF THE OXYGEN.**—This gas was prepared on the premises in an iron retort heated by a gas burner, from chlorate of potassium and black oxide of manganese. From this retort it passed first through a scrubber, in which it was thoroughly washed, and then into a small gas holder of about twenty cubic feet capacity. The two materials I found to be of excellent quality, and the apparatus was of satisfactory character. The young man who prepared the oxygen had been well instructed by Mr. J. B. Spurge, and was well acquainted with what was required of him, and with the dangers that might arise in the case of any carelessness on his part. I am, therefore, of opinion that the quality of the oxygen produced was satisfactory, and need not be taken into consideration in seeking for the causes of explosion.

**METHOD OF COMPRESSING THE OXYGEN.**—Without going too much into detail, I may state that the compression of the oxygen into the cylinders was accomplished in two stages. In the first stage the oxygen from the gas holder is compressed into two large iron or steel cylinders, called receivers, by means of a double air pump, which is capable of compressing it up to seventy or eighty atmospheres. From these receivers it is transferred to the cylinders by means of water, which is forced into the receivers at their lower end, by means

of a hydraulic pump, until a pressure of one hundred and twenty-five atmospheres is reached. This pressure is measured by means of two pressure gauges, of which one is attached to the delivery tube through which the oxygen enters the cylinders, the other being in connection with the hydraulic pump. These receivers are painted black; they are connected with each other by air pipes, and with the coal gas receiver and the hydraulic pump by water pipes, and can be connected by means of suitable fittings with the cylinders to be filled. The first set of pumps (the air pumps) is used for the compression and liquefaction of nitrous oxide as well as in the first stage of the compression of oxygen, but never for that of coal gas; I should state that apart from the direct statement to this effect by the manager, there are these facts to take into consideration: There is no connection between these pumps and any coal gas supply, and the admixture of even a minute proportion of coal gas with the nitrous oxide would render this latter gas unfitted for inhalation. We have, therefore, strong proof that the gas compressed into the iron receivers cannot have been mixed with any coal gas; the admixture of nitrous oxide would, as far as the accident is concerned, be of no account.

No grease is allowed to be applied to any of the fittings of the cylinders, or of the iron storage receivers, and both the manager, Mr. Spurge, and the man attending to the compression were fully alive to the danger that might result from grease finding its way into the oxygen cylinders. At the time of my inspection there was certainly no grease on any of the fittings of the receivers. Alongside these two receivers for oxygen there is a similar one for the storage of coal gas.

This gas is also compressed in two stages, first by two air pumps used only for this purpose, which force it into an upright receiver, similar to the oxygen receiver, but painted red. From this receiver it is pressed into the cylinders, in the same way as in the case of oxygen. The hydraulic pump is used for pumping the water into both the oxygen and the coal gas receivers; the water it, however, never used twice, but each time the receivers are filled with oxygen or coal gas respectively, the water they contained is allowed to run away and fresh water is taken, so that no coal gas can be taken into the oxygen cylinder or *vice versa* by means of the water used. As, however, the hydraulic pump is connected with both sets of receivers, the possibility of coal gas entering the oxygen cylinder is not absolutely excluded.

In order to make the same hydraulic pump serve for the purpose of filling all the cylinders (oxygen and the coal gas) with water, a tube (hydraulic tube) runs from the pump horizontally along the front of the receivers about half way up their height, and from this tube branch pipes run down to the bottom of the cylinders. By means of valves on this tube the water can be shut off from or allowed to enter any one of the cylinders at will. When the valves are closed, and the hydraulic tubes are full of water, there is no connection between the oxygen and coal gas cylinders through which air could pass from one cylinder into the other. But when the hydraulic pump is not working, and the two valves on the hydraulic tubes leading respectively to the coal gas and to the oxygen cylinders are open, a communication may be established between the two cylinders through these hydraulic tubes, by means of which gas may flow from one into the other.

All the cylinders now used by Mr. Newton which are to contain oxygen are painted black, and their connections have a right handed screw, while all cylinders for coal gas are painted red, and have a left handed screw. These cylinders cannot therefore be mistaken one for the other. At the same time I was informed by Mr. Spurge that they still occasionally fill cylinders for some of their customers both with coal gas and with oxygen which are not so painted and fitted. When Mr. Clarkson receives a cylinder to be refilled it is not emptied, neither is the gas it may contain tested. The amount of gas left in is, however, measured by a pressure gauge, and a customer credited for the amount. Should, therefore, a cylinder, supposed to be an oxygen cylinder, contain coal gas, it would be filled with oxygen, and might, depending on the amount of coal gas left in, contain an explosive mixture.



**TESTING THE CYLINDERS.**—All the cylinders supplied by Mr. Clarkson are tested at his place by hydraulic pressure up to two hundred or two hundred and thirty atmospheres, under which pressure they are left for about two minutes. No steps are, however, taken to ascertain if the cylinder tested has or has not been strained by the test applied beyond the elastic limits of the material of which it is made, and the value of the test is thereby greatly reduced.

**THE CYLINDER.**—This was what is known as a lap-welded cylinder of about three and three-quarter inches internal diameter, and a thickness of a little over three-sixteenths. This thickness would be amply sufficient to withstand safely a pressure of one hundred and twenty-five atmospheres. With a steel of a tenacity of thirty tons to the square inch, it would, in fact, burst only at a pressure of about four hundred and twenty-seven atmospheres. The steel, however, was not of a quality best suited for such cylinders; it was too hard, and not sufficient ductile, owing probably to its not having been effectively annealed. There were also running along the entire length of the cylinder, shallow streaks, which, when the metal is bent, have a tendency to open into cracks, and had probably somewhat weakened the metal. Chemically, however, it was of high quality. The inner surface was fairly clean, but at the end at which the valve was, the surface was incrustated with magnetic oxide of iron, which was easily removable, and which, under the microscope, showed in many places the globular form assumed by the magnetic oxide produced by the burning of iron. The lower part of the brass screw, by means of which the valve fittings are screwed into the bottle, was also incrustated with magnetic oxide of iron, much of which was in the form of small globules produced by fusion at a very high temperature. They were evidently fused to the material of the screw, and had in some cases even slightly fitted the metal. The magnetic oxide attached to the bottle still contained a trace of greasy or fatty material. The brass fittings had been broken off, obviously by a blow against their upper end. The part of the screw free from screw thread which passed through the stuffing box was slightly greased; this grease had undoubtedly come from the stuffing box. The screw portion on the inner side of the stuffing box was quite free from grease. The valve itself was also entirely free. The small hole through which the oxygen escaped, contained however, a minute quantity of grease similar to that on the upper part of the valve screw. Here there was also a leather washer, which had probably at one time been greased to render it more tight.

The bottle had been ripped open by a force acting from the interior with considerable violence.

Previous to giving way, the bottle had obviously been expanded or bulged, the rent running at first longitudinally along the cylinder, at each end of which there were two rents running across on each side, and extending to about two-thirds round the circumference of the cylinder, thus producing two flaps, which were bent outwards, and nearly flat. No portion of the metal was missing. Along the first fracture the thickness of the metal had been reduced in parts to two-sixteenths, showing a considerable stretching of the metal had taken place before rupture.

After thoroughly weighing all circumstances of the case as they present themselves, I have reluctantly come to the following conclusions: Firstly, that the rent at the time of the accident contained an explosive gaseous mixture, and secondly, that this mixture was fired by some portions of finely divided iron, or perhaps grease, igniting the compressed gas. That some iron had actually been on fire in the cylinder, the condition of the screw sufficiently proves.

I cannot conclude without expressing my best thanks to Mr. Clarkson, more especially to his manager, Mr. Spurge, for giving me every facility to inspect their works, and for the very open and complete manner in which the latter answered all my questions.

**PARTICULARS OF THE STEEL.**—*Piece cut lengthways from the bottle:*

Elastic limit 25.15 tons per square inch.  
Breaking strain 30.16 tons per square inch.  
Extension on a 8 in. piece 13.2 per cent.

*Piece cut transversely to the length of the cylinder :*

Elastic limit 84.11 tons per square inch.  
 Breaking strain 85.19 tons per square inch.  
 Extension on a 1½ in. piece 18 per cent.

ANALYSIS.

Iron.....	99.128.
Carbon.....	0.107.
Manganese.....	0.432.
Sulphur.....	0.058.
Silicon.....	0.011.

In reply to questions by members of the jury, Dr. Dupré said that Mr. Clarkson employed proper machinery and competent men ; the contingency of which he had spoken was very remote. The grease might have been forced from the wash leather by the explosion. If distinct tubes were used for oxygen and hydrogen, an explosive mixture, he thought, could not be formed.

The coroner, in summing up, said that an expert stated that mixed gases caused the explosion. How grease or iron got into the cylinder remained a mystery ; they must remember that the cylinder passed through several hands, and that the deceased man himself had two candles in his pockets.

After an absence of nearly half an hour, the jury returned a verdict of accidental death, adding the following rider : "The jury recommend that all compressed gases of an explosive nature should be scheduled under the Explosive Act ; that all cylinders should be tested by the Government periodically ; that no cylinder should be allowed to be used or conveyed about unless bearing the Government stamp ; that all manufacturers should be licensed by the Board of Trade ; and that separate hydraulic pumps should be used in filling the cylinders. They also suggest that a Railway and Board of Trade Inquiry should be instituted."

**The Artistic Competition Prints.**—The 1894 set of artistic competition prints were exhibited during the month of May by the Syracuse Camera Club. Clubs desiring to exhibit this fine collection of prints should send in their applications without delay. The prints are mounted on heavy boards, but not framed.

**How to Copy Engravings.**—Many workers find a great difficulty in successfully copying engravings, so as to reduce the prominence of the lines and cross hatchings. These, when magnified by the lantern, spoil the picture. But it is possible to tone them down in such a way that they will not be objectionable. There are several methods of doing this. The best one is very easy to manage, so as to effectually break up those lines which appear so prominent in skies and foreground. Cover the engraving which is to be copied, with a thin and finely ground piece of glass, the polished side downwards. This glass must be exceptionally clean, and to ensure this, it should be brushed over with ammonia or nitric acid, afterwards well water washed. When the glass is in position it will be seen that the engraving, viewed through the glass, has the appearance of a pencil drawing. No lines are visible, but a general softness has taken their place. Of course it would be perfectly useless to photograph the print in this condition. To restore vigor to the important parts of the picture go over the ground glass surface with a brush dipped in oil, painting, as it were, every portion except the sky and the immediate foreground, where the objectionable lines usually are to be seen. This operation will give the desired blackness, thus rendering the print capable of producing a first-class negative. If this method be adopted, the result will prove most satisfactory, for it will be impossible to distinguish the obnoxious lines.—*Photography.*

## CORRESPONDENCE.

## AMERICAN AMATEUR PHOTOGRAPHER MEDALS.

LE CAIRE (Egypte), le April 14, 1895.

TO THE EDITORS:

*Dear Sirs.*—Your letter of the 25th of January, announcing my success in your Annual Lantern Slide Competition, reached me at Assouan, some 700 miles up the Nile at the 1st Cataract; and from the last numbers of your journal received, I learn that it was the only silver medal awarded.

Your medals, from being but rarely given, gain an additional value, and my satisfaction is therefore the greater in having gained the distinction.

Should any of the work I have done in Egypt prove successful, I hope to be able to send you some prints which, perhaps may be worthy of reproduction.

Yours faithfully,

ERNEST R. ASHTON.

**Correction.**—In the review of the Annual Exhibition of the Boston Art Club, published in the May number of the AMERICAN AMATEUR PHOTOGRAPHER, the statement was made that the results obtained with the shorter focus instruments with great illuminating power, specially designed for portraits, were "inferior" to those got with a regular symmetrical type. This is a typographical error, and "inferior" should read "superior," twenty-ninth line from the top, page 225.

## Editorial Table.

**ADVANTAGES OF DIAPHRAGM SHUTTERS.**—It is a well-known fact that many important inventions are matters of chance. We have now to record one in photographic apparatus, which, while simple, nevertheless offers the attainment of artistic results which are otherwise impossible. Mr. Ernest Edwards, President of the Photo-Gravure Co., is the owner of several of the diaphragm shutters manufactured by the Bausch & Lomb Optical Co. He has found that with them he can obtain prolonged time exposure, and instantaneous as well, with one aperture. In the *Sun and Shade*, he says that "he attaches importance to this double exposure, where sharpness is obtained by the long exposure with the small stop, with detail in the shadows, and roundness is obtained by the short exposure with the large stop, without any apparent loss of sharpness, and has found it more satisfying than anything he has yet used."

The Bausch & Lomb Optical Co. find that their shutters can be made to accomplish this purpose without detriment to their other admirable qualities, and they will so supply them if desired at the regular price, and will change those now in use at a nominal charge, giving the necessary instructions for using them as Mr. Edwards does.

Mr. A. P. Yates, of "Empire State Express" fame, who has in all his work used the same shutter, has had the above improvement added and obtained the same satisfying results as Mr. Edwards.

**ROUGH SURFACE PLATINOTYPE PAPER.**—Messrs. Willis and Clements, 1624 Chestnut street, Philadelphia, Pa., have introduced a new rough surface cold process platinum type paper, which lends itself readily to the production of artistic prints.

## EQUATIONS OF THE CONJUGATE FOCI; THEIR DERIVATIVES AND THEIR USES.\*

BY WILLIAM M. MURRAY.

*(Continued from page 238.)*

## VII. TO CALCULATE EXPOSURES.

Besides the equations we have just been discussing, Mr. Branfill gives an expression by which we can find the Uniform System number for any lens and stop, to enable us to compare its speed with a standard lens—a portrait combination—the diaphragm of which is one quarter the focal length.

The Uniform System No.  $= \frac{p^2}{16a^2}$ ,  $a$  being the actual size of the lens. A glance

at the expression shows that it reduces to unity when  $\frac{p}{a} = 4$ . And if we have a

lens whose diaphragms are not marked according to the Uniform System we may obtain their comparative rapidities by substituting the proper values in the expression  $\frac{p^2}{16a^2}$ .

Branfill's final equation is to find the time of exposure for any given lens, stop and ratio of reduction or enlargement. Designating the exposure by  $x$ ,

$x = \frac{f^2}{16a^2} = \frac{p^2}{16a^2} \cdot \frac{(r+1)^2}{r^2}$ , that is if  $x = 1$  when  $\frac{p}{a} = 4$ . As we are not likely to

make our test exposures on a portrait lens (of  $\frac{p}{4}$  rapidity), this equation in its present

form is not convenient to use. But if we substitute for 16 (the square of the intensity ratio 4 of the portrait lens), the square of the intensity ratio of any other lens we wish to use as a standard, we shall be able to calculate readily any required exposure. Thus, if we find a certain view with a lens 7 inch focus and stop  $\frac{7}{8}$  inch in diameter

requires 1 second, as  $\frac{p^2}{64a^2} = \frac{(7)^2}{64(\frac{7}{8})^2} = 1$  second, a lens 12 inch focus, with stop 1

inch in diameter, requires  $2\frac{1}{4}$  seconds, because  $\frac{p^2}{64a^2} = \frac{144}{64} = 2\frac{1}{4}$  seconds.

If, instead of a distant view we copy an object at short range, we use the equation in its more complete form and substitute the value of  $r$ , or  $f$ . Thus, if the lens 7 inch focus and stop  $\frac{7}{8}$  inch required 1 second on the open view as above, it would require  $1\frac{1}{2}$  seconds if used to copy an object one-quarter its original size, the strength

of light being the same, for  $x = \frac{f^2}{64a^2} = \frac{p^2}{64a^2} \cdot \frac{(r+1)^2}{r^2} = \frac{(7)^2}{64(\frac{7}{8})^2} \cdot \frac{(4+1)^2}{(4)^2} = 1.56$  seconds.

Having our lens stops once marked according to the Uniform System, we may, however, dispense with the use of these last equations, as we may make any particular stop the unit of exposure, to suit the sensitiveness of the plate employed. The

\* Read before the Society of Amateur Photographers of New York, November, 1894. Reported in the *Journal* of the Society, December, 1894.

system of using graduated diaphragms to regulate exposures, as adopted by the Photographic Society of Great Britain, was devised on the principle that it is convenient to have a series of stops, each one requiring twice the exposure of the one

preceding it, the largest aperture being that of the portrait lens, working at  $\frac{p}{4}$ , which

is the unit of the system. As the light admitted through a lens varies as the area of the circular aperture or diaphragm, and as the areas of circles are to each other as the squares of their diameters, and as the diameters of diaphragms may be, and are expressed in fractions of the focal length, therefore we may construct the following table of exposures:

Ratio of focus to diaphragm, or $\frac{p}{n}$	Exposure ratios: being the square of stop ratios.	U. S. exposure numbers	Exposure for plates sensometer 16 as Carbutt B	Exposure for plates sens. 27 as Carbutt Eclipse, or Cramer Crown, or Seed 26 x.
		2d column in lower terms.		
4	16	1	$\frac{1}{8}$ sec.	$\frac{1}{16}$ sec.
5.6	32	2	$\frac{1}{4}$ sec.	$\frac{1}{8}$ sec.
8	64	4	$\frac{1}{2}$ sec.	$\frac{1}{4}$ sec.
11.3	128	8	1 sec.	$\frac{1}{2}$ sec.
16	256	16	2 sec.	$\frac{1}{4}$ sec.
22.6	512	32	4 sec.	$\frac{1}{2}$ sec.
32	1024	64	8 sec.	1 sec.
45.2	2048	128	16 sec.	2 sec.
64	4096	256	32 sec.	4 sec.

It will be seen by the fourth column that  $\frac{p}{11.3}$  with 1 second is taken as the unit of the exposures for the ordinary landscape plate of medium sensitiveness (Warnerke 16), and by the fifth column  $\frac{p}{45.2}$ , with 1 second as the unit for the very fast plates (Warnerke 27); both estimated for open and well lighted views, including, say a far distance, a middle distance and a foreground with some foliage.

#### TO FIND DISTANCE BEYOND WHICH ALL OBJECTS ARE IN FOCUS.

Strictly speaking, there is no such thing as a lens with depth of focus. In Figure IV. we see that an object at  $A$  on the axis of the lens has its focus at  $B$ , and an object at  $A'$  has its focus at  $B'$ ; and so for any other point, every value of  $F$  having its corresponding value of  $f$  according to the general law of conjugate foci. But where the objects are very distant, the rays from them being practically parallel, they will have their images sharp at the focus for parallel rays or the principal focus.  $y = f - p$

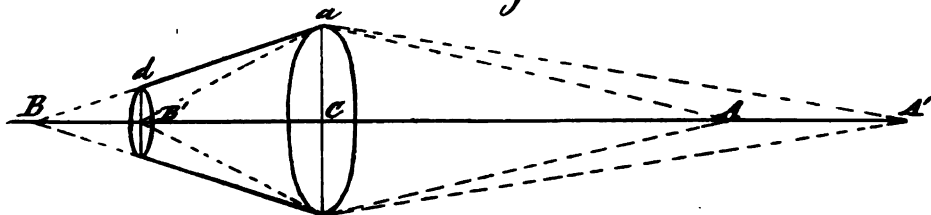
$-\frac{p^2}{F}$ ;  $F = \infty$  for objects at infinite distance, and  $y = f - p = \frac{p^2}{\infty} = 0$ . So by

reason of distance there is a point beyond which all objects will be practically sharp.

Similarly, when we cause the rays from nearer objects to become nearly parallel by employing small diaphragms, we bring this point nearer to the lens. By comparing the equations of the conjugate foci with the equations expressing the relations of the diaphragms, we may arrive at a formula for the place of this point. What we understand by depth of focus, then, depends entirely on the diaphragms, and not in any way on the constitution of the lens itself.

In Figure IV. we have a lens having its optical center at  $C$ .  $A$  is a point on the

Figure IV



axis having its focus at  $B$ , and  $A'$  another point having its focus at  $B'$ .  $AC$  is therefore the greater conjugate focus, or  $F$ , for the first object, and  $A'C = F'$  the greater conjugate focus for the second object. Then  $CB = f$ , and  $CB' = f'$ .

Let diameter of lens opening be designated by  $a$ . Then rays proceed through lens diaphragm at  $C$  in a cone having at  $B'$  the diameter expressed by  $d$ . From

similar triangles,  $d : a :: BB' : BC$ , or,  $\frac{d}{a} = \frac{f-f'}{f}$  (1)

According to the general equation for conjugate foci for an object at  $A$ , we have

$$\frac{1}{F} + \frac{1}{f} = \frac{1}{p}, \text{ and for an object at } A'$$

$$\frac{1}{F'} + \frac{1}{f'} = \frac{1}{p}. \text{ Therefore, } \frac{1}{F} + \frac{1}{f} = \frac{1}{F'} + \frac{1}{f'}$$

$$\begin{aligned} F' f' f + F' F f' &= F f' f + F' F f \\ F' f' f - F f' f &= F' F f - F' F f' \\ f' f (F' - F) &= F' F (f - f') \end{aligned}$$

$$\frac{f-f'}{f} = \frac{f' (F'-F)}{F' F} \quad (2)$$

$$\text{Combining (2) and (1), } \frac{d}{a} = \frac{f' (F' - F)}{F' F} \quad d = \frac{a f' (F' - F)}{F' F} = \frac{a f'}{F} \cdot \frac{(1 - \frac{F}{F'})}{F'} \quad (3)$$

If  $A'$  is infinitely distant,  $F' = \infty$ ,  $f' = p$ , and  $\frac{1 - \frac{F}{F'}}{F'} = 0$

Equation (3) then becomes  $d = \frac{a p}{F}$  (4)

Expressing  $a$  in terms of the focus,  $a = \frac{p}{n}$ ,  $n$  being the number of times diameter of diaphragm is contained in the focus,

Equation (4) becomes  $d = \frac{p^2}{n.F}$  (5) and  $F = \frac{p^2}{n.d}$  (6)

Regarding diameter of the greatest allowable circle of confusion as  $\frac{1}{160}$  inch,  $d = \frac{1}{160}$ , and  $F = \frac{100 p^2}{n}$

Designating by  $D$  such a value of  $F$  as would give no larger circle of confusion than  $\frac{1}{160}$ "—at which distance everything would be practically sharp—and dividing the co-efficient of  $p^2$  by 12 so as to have our answers in feet, we have  $D = \frac{8.3 p^2}{n}$  (7)

Substituting in (7) the values for  $p$  and  $n$ , we may calculate the distance beyond which everything is in focus for any lens and stop. Supposing our lens to be a rapid rectilinear of 7 inches focus, furnished with diaphragms according to the Uniform System, we have

$D$	$=$	$\frac{8.3 \times 49}{8}$	$=$	50.8 feet for stop	$\frac{p}{8}$
$D$	$=$	$\frac{8.3 \times 49}{11.3}$	$=$	36 " " "	$\frac{p}{11.3}$
$D$	$=$	$\frac{8.3 \times 49}{16}$	$=$	25.4 " " "	$\frac{p}{16}$
$D$	$=$	$\frac{8.3 \times 49}{22.6}$	$=$	18 " " "	$\frac{p}{22.6}$
$D$	$=$	$\frac{8.3 \times 49}{32}$	$=$	12.7 " " "	$\frac{p}{32}$
$D$	$=$	$\frac{8.3 \times 49}{45.2}$	$=$	9 " " "	$\frac{p}{45.2}$
$D$	$=$	$\frac{8.3 \times 49}{64}$	$=$	6.3 " " "	$\frac{p}{64}$

We may therefore leave our ground-glass at the adjustment for principal focus, and by putting in the foregoing series of stops secure such depth of focus—so-called—that with the smallest stop  $\frac{p}{64}$  everything over  $6\frac{1}{2}$  feet distant will be in apparent sharpness.

#### DEFINITION OF LENSES.

Referring again to Equation (5),  $d = \frac{p^2}{n.F}$ , we see that the diameter of the circle

of confusion varies directly as the square of the focus, and inversely as the distance of the object and the ratio of the focus to the diaphragm. For constant values of  $F$ , or when the object remains at the same distance, the circle of confusion varies as

$\frac{p^2}{n}$ . Consequently, the definition varies as  $\frac{n}{p^2}$ . If we require definition, therefore,

without at the same time sacrificing rapidity, a small lens is preferable. For if we compare two lenses, one 12" and the other 6" focus, both furnished with stop  $\frac{p}{8}$ , or exactly the same rapidity, we have for their respective definition,

$$\text{Def. of 12" lens} = \frac{n}{p^2} = \frac{8}{144} = \frac{1}{18} \qquad \text{Def. of 6" lens} = \frac{n}{p^2} = \frac{8}{36} = \frac{4}{18}$$

Thus, for the same speed the smaller lens has four times the definition. Therefore, *if we double the focus, keeping the same rapidity, we lose four times the definition.*

Let us give the 12" lens such a stop as will give the same definition as the 6" lens,

$$\text{Def. of 6" lens} = \frac{8}{36} = \frac{2}{9} \qquad \text{Def. of 12" lens} = \frac{32}{144} = \frac{2}{9}$$

and we see that the smaller lens for the same definition has sixteen times the speed. Therefore, *if we double the focus, keeping the same definition, we lose sixteen times the rapidity.*

If we use the same size of diaphragm in both lenses—say  $\frac{3}{4}$  inch—which is  $\frac{p}{8}$  for the 6" lens and  $\frac{p}{16}$  for the 12" lens, we have,

$$\text{Def. of 12" lens} = \frac{16}{144} = \frac{1}{9} \qquad \text{Def. of 6" lens} = \frac{8}{36} = \frac{2}{9}$$

Here we find the larger lens has only half the definition, while  $\frac{p}{16}$  is only  $\frac{1}{4}$  the speed of  $\frac{p}{8}$ . Therefore, *if we double the focus, keeping the diaphragm the same actual size, we lose one-half the definition and four times the rapidity.*

And *if we keep the focal length the same, and double the actual diameter of the stop* (which gives four times the speed), *we only lose half the definition.* For

$$\text{Def. of 6" lens with } p/8 = \frac{8}{36} = \frac{2}{9} \qquad \text{Def. of same lens with } p/4 = \frac{4}{36} = \frac{1}{9}$$

If, on the other hand, we could be satisfied with the smaller lens having half the definition of the larger one, we might increase the speed sixty-four times. For

$$\text{Def. of 12" lens with } p/32 = \frac{32}{144} = \frac{2}{9} \qquad \text{Def. of 6" lens with } p/4 = \frac{4}{36} = \frac{1}{9}$$

Therefore, *if we diminish the definition one-half, using a lens of one-half the focus, we gain sixty-four times the rapidity.*

(To be continued.)



**BOOKS RECEIVED.**

**SENSITIZED PAPERS, HOW MADE AND USED.** By Henry C. Stieffel, Ph.D. New York, paper covers, 129 pp., \$1.00. A very useful book explaining the details of the manufacture of different kinds of sensitized papers, and containing illustrations of machinery used, giving, besides, a large number of formulas and directions for working the prepared papers. We commend the book to every amateur worker desirous of becoming acquainted with the value of ready sensitized papers.

**CATALOGUE OF WATERBURY HAND CAMERAS.** Scovill & Adams Co., New York. It is illustrated and gives directions for working these new and well-known instruments.

**CATALOGUE OF THE MYSTIC CAMERA CLUB'S SIXTH ANNUAL EXHIBITION,** held at Medford, Mass., April 19th to 24th, inclusive. It has a half tone frontispiece of the officers of the Club, and is very neatly printed.

**CATALOGUE OF THE G. P. GOERZ OPTICAL WORKS.** Has four pages of half tone illustrations, showing the interior and exterior of their extensive lens works, besides useful hints.

**CATALOGUE OF THE ILLINOIS COLLEGE OF PHOTOGRAPHY,** L. H. Bissell, President, Effingham, Ill., who will send copies on application. It is neatly illustrated, and explains the scope and idea of the college in a practical way. The aim is to gain useful, actual knowledge, so that a person may become proficient enough to practice photography as a business.

**CATALOGUE OF TAYLOR, TAYLOR & HOPSON,** Leicester, England, describes by good illustrations and other data their well-known optical lenses. Particulars regarding the new Cooke lenses are soon to be issued in the form of a supplement.

**CATALOGUE OF THE COLLINEAR LENS.** By Benj. French & Co., 319 Washington street, Boston, Mass. This lens is said to be the latest achievement of Voigtlander, and has several remarkable features.

**PHOTOGRAVURE.**—By Henry R. Blaney. Scovill & Adams Co., New York. 43 pp., paper covers, 50 cents. A well printed book, being a compilation of articles on the subject formerly appearing in the *Photographic Times*, and supplemented by additional matter, supplied by Mr. Walter E. Woodbury. There are chapters on how to make "The Transparency," "The Carbon Tissue," the "Cleaning and Graining of the Copper Plate," the "Negative Resist and Biting with Acid," the "Acid Baths, and How to Make Them," and "Printing the Plate and Steel Facing." There is a photogravure picture as a supplement, and useful formulas for the different parts of the process are given in clear terms. The book is numbered No. 51, Scovill & Adams Series.

**REPORT FOR 1894 OF THE PHOTOGRAPHIC SOCIETY OF STOCKHOLM, SWEDEN.** A handsomely printed book in the language of Sweden, of 65 pages. It contains a number of well executed half-tone illustrations, and is embellished with a very pretty photogravure frontispiece, a water and sunset view, evidently made instantaneously. We are pleased to note the progress our Swedish friends have made in the line of reproduction processes or process work.

**ILLUSTRATED CATALOGUE OF THE CRITERION LANTERN.** A small leaflet catalogue, containing numerous illustrations of this lantern and attachments, made by J. B.

Colt & Co., who have recently moved to new, larger quarters at 115 and 117 Nassau street.

**LANTERN SLIDES. HOW TO MAKE AND COLOR THEM.** By Dwight Lathrop Elmendorf. E. & H. T. Anthony & Co., publishers, New York. 68 pp., \$1.00. An extremely practical book, devoted exclusively to manipulation and treatment of prepared lantern slide dry plates, methods of exposure, and a clear exposition of the points to be observed in coloring. The book is divided into five chapters, I., The Contact Method; II., The Camera Method; III., Diseases and Remedies; IV., Testing Slides; V., How to Color Slides. There are several excellent illustrations, including views of apparatus to be used.

The first step in securing a good slide, Mr. Elmendorf says, is to know what a good negative is. In his opinion, a negative a trifle overtimed or flat, for paper prints, yields the best slide, because it is clear, full of detail, having an exceedingly fine grain or deposit.

He has had a long experience in slide making on dry plates, and in setting forth so clearly every step of the process as he does in this book, besides the faults one may expect to be bothered with, he renders a service which will be appreciated by every amateur desirous of learning the best method of lantern slide manufacture. It is an understandable book written in plain language, and as every step described is what Mr. Elmendorf has learned from experience, it is thoroughly reliable. The book is greatly needed; it is likely to meet with a large sale. We thank Mr. Elmendorf for writing it.

**ONE HUNDRED TRICKS IN OUR TRADE.** By Hare & Scott, Hamilton, Ohio; 49 pp. 50 cents. A compilation of the latest formulas for emulsion papers, toning baths, developers, solar prints, blue printing paper, and many other useful things. It is illustrated with two mounted prints made on collodion and silver paper. The book is well worth the price and very convenient to have in the studio.

**PHOTO NOTES.** A new fortnightly journal edited by C. Welborne Piper, published in London, England, is a magazine for photographic societies. Publishes exhibition prospectuses and forms and notices at greatly reduced rates.

**ROSS & Co.'s 1895 CATALOGUE.** We have received from Ross & Co., London, England, their new enlarged catalogue for 1895, containing illustrations of their many beautiful lenses for camera, microscopic and field work, field glasses, etc. etc., besides hand and tripod cameras, shutters, etc. They are valuable to have if anybody wants to keep up with the times.

**THE PHOTOSCOPE: ITS CONSTRUCTION AND USE.** A catalogue pamphlet, by the inventor, Mr. W. Sanders, 91 Mount Pleasant, Liverpool, England, illustrating and describing his ingenious opera glass roll holder camera, made for him by Ross & Co., of London.

**INSTRUCTION IN PHOTOGRAPHY.**—Messrs. Pancoast and Hand, of 1215 Filbert street, Philadelphia, Pa., a new firm recently organized, have issued a pamphlet describing how they propose to assist the amateur photographer to overcome failures by a system of "coaching." They say:

Thrown exclusively upon his own slender resources or possibly those of friends equally innocent of the art, he is compelled to attend that most costly of all schools, wherein "experience" holds the ferrule, and to waste his time and money in utterly futile attempts.

Every amateur can and does readily acquire a certain limited insight into photography from the countless text books bearing on the subject, and he frequently only lacks a little practical instruction on "what to do next"—or what not to do now—to tide him over the quicksands of failure, and launch him on the placid waters of an available knowledge of this delightful art. The plate-maker has no time and perhaps no aptitude or inclination to furnish instruction, the stock-dealer, even if he chance to be qualified regards it as quite outside his province, while the regular "professional" is loth to sell what he very naturally regards as the secrets of his craft, and hence is careful not to lend too much value to his tentative instructions. We are prepared to impart systematically and thoroughly instruction in every branch of photography usually essayed by the amateur. We undertake to instruct individuals or classes in the practical details of field and laboratory practice, and to qualify our pupils as competent photographers. We also offer our services in the selection of photographic outfits and materials of every character, bringing to this branch of our undertakings a very extensive knowledge, absolutely divorced from any bias or predilection for special makes, brands or men—suitability being the sole consideration governing their selections of photographic goods.

We are also prepared to develop, print, make lantern slides, etc., for which, and kindred work, we have ample facilities.

The well-known abilities of Mr. C. R. Pancoast, as an expert photographer, are a guarantee that instruction and advice he may impart will be valuable. Mr. S. Ashton Hand is by profession a mechanical engineer of note, and a thorough master of the technique of photographic processes. The venture is a most worthy and needful one, and we unhesitatingly recommend all who are desirous of learning rapidly the art of modern dry plate photography to try some "coaching" from this new and energetic firm. They will give full value for the money expended.

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### PICTURES RECEIVED.

W. L. KELLEY, of Danville, Ill., sends us a batch of aristo prints, all of which show manipulative skill, and many quite a little taste. We have appropriated one, which will be used as an initial.

J. M. BROOKS, of Columbus, Ind., submits two photographs which are above the average, although overprinted. "In the Fields" is much too heavy for a picture taken in full sunlight. The negative is probably a trifle over-exposed. The other photograph would be improved if the figures weren't all looking out of the picture.

F. S. STEDMAN, of Pittsburg, Pa., submits us a batch of very neatly gotten up prints. This gentleman's work is technically good, and shows very much care. Pictorially they are somewhat above the average, for they show thought, and are not the result of hap-hazard pressing the button. "A Gray Day" would be improved if printed in platinum, in order to suggest the grayness. "A Reminiscence of Bachelor Days" is an excellent piece of photographic work, but is too trivial to have any artistic value. The subject is a good one, and might be worked out very satisfactorily. "Rough Weather at the Beach" is lacking in detail. It is not good. "Lowtide, Wantasket Beach" will be used by us as a tailpiece. Mr. Stedman will notice how trimming greatly improves it. The figure is disturbing. Another print of the batch will be used as an initial.

THEO. D. HALL, of Wegaunee, Mich., sends us two photographs of a heavy snow-fall in his home. As records of such they are valuable. Of course no attempt has been made at picture making. The snow is well rendered.

*"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 232, Vol. VII.*

face a 5 grain solution of bromide of potassium; this instantly arrests the development and preserves the brilliancy of the image; wash and clean in a solution of 4 ozs. of hypo to 20 ozs. of water; wash and immerse for a minute in a clearing solution of water 20 ozs., alum, powdered,  $1\frac{1}{2}$  ozs., sulphuric acid,  $\frac{1}{2}$  oz. Wash thoroughly and go over the surface with a swab of absorbent cotton while water is flowing over it, and dry spontaneously.

**OPAQUE SPOTS**—Almost always due to defects in the plates and cannot be corrected by after manipulation. ●

**OPTICAL CENTER**—Every lens possesses a point situated in its principal axis which is of great importance. A ray of light passing through that point will undergo opposite refraction, so that it will leave the lens parallel with the direction in which it entered. If we consider the lens without thickness, we simply say, rays passing through the optical center of the lens undergo no refraction. The optical center can easily be found by drawing two radii from the center of curvature of its surfaces parallel to each other but oblique to the axis; connect the two extremities and the prolongation will cut the axis at the optical center. If the lens is a double convex one of equal radii, the optical center is the center of the lens, or its center of gravity. None but single lenses have true optical centers. In achromatic combinations the optical center may be approximately found by considering it a single lens. But if we change our curve into a shallower one of longer radius, it is evident that the optical center is shifted towards the more prominent, more curved side, and continuing to make that side shallower, it will gradually move until the surface is converted into a plane, in which case the optical center is coincident with the point where the axis cuts the curves and center. Going on still reducing that surface by making it a concave or negative one, the optical center still marches on moving out of the lens, and if it becomes equal to the positive one the optical center would be infinite, and if we disregarded the thickness, we have no lens, but a non-optical glass like a watch glass.

**OPTICAL LANTERN**—See Magic Lantern.

**OPTICS**—That branch of physical science which treats of the nature and properties of light, the laws of its modification by opaque and transparent bodies, and the phenomenon of vision.

**OPTIC ANGLE**—The angle included between the two lines drawn from the extreme points of an object to the center of the pupils of the eye's visual angle.

**OPTIC AXIS.**—A line drawn through the center of the eye perpendicular to its anterior and posterior surfaces.

**ORANGE LIGHT.**—Actinic light passing through any medium which will absorb all but the orange rays. This is found to be a safe light for the illumination of the dark room when medium rapid plates are used. Plates of higher sensitiveness would be apt to fog unless the light admitted be much reduced.

**ORTHOCHROMATIC PHOTOGRAPHY.**—The advantages attained by adding color sensitive bodies to bromide of silver, gelatin or collodion emulsions, and the more recently adopted methods to color-sensitize ready made plates by bathing them in a solution of these dyes, are widely acknowledged. Whether or not the ray filter or colored screen is in all cases an absolute necessity, is still a debated point. With some of the iodide of silver plates, it is insisted by many that other screens can be dispensed with, and when erythrosine ammonia nitrate of silver plates are exposed to the yellow petroleum or gas lights, there certainly is no necessity for the yellow screen. In all other cases it favors orthochromatic effects. Plates sensitized for color serve principally for the correct reproduction of those colors of the solar spectrum for which ordinary emulsions are not sensitive enough. While they are easily impressed by blue, indigo and violet, the red, yellow, and green, of less refrangibility, are but little or not at all reproduced. Different sensitizers sensitize for different effects; eosine sensitizes for yellow only; erythrosine sensitizes mainly for yellow and green, and according to Schumman, cyanine is the sensitizer for red and orange. Azaline, a mixed color consisting of chinoline red and cyanine, is also very highly red and yellow sensitive. These dyes, artificially prepared organic compounds, belong to the Triphenyl Menthene series. The chemical formulæ of many of these substances is not definitely known, or instead of being a single substance, they may in many instances be compound. Chlorophyll, introduced by Mr. Ives as a powerful orthochromatic sensitizer, is a natural dye. *Azaline*, used by Dr. Vogel with his commercial color sensitive plate, is a compound of cyanine and chinoline red. The cyanine bath is prepared with cyanine solution, 1-500, 5 c. c. m. (1 drm. 25 m.); water, 200 c. c. m. (7 ozs. 40 m.); alcohol, absolute, 10 c. c. m. (2 drs. 5 m.); ammonia, 2 c. c. m. ( $\frac{1}{2}$  drm.). The ammonia and cyanine solution can be increased to double this strength. This bath can be used but once, upon a plate coated with a pure bromide of silver gelatine emulsion free from iodide of silver. Pyro potash is a good developer for these plates, but to prevent fog, bromide of potash must be used with it. Erythrosine sensitizing: The plate is placed in a preliminary bath; ammonia,  $\frac{1}{2}$  dr., water, 7 ozs. 1 dr., for

a short time, washed out and then placed in the sensitizing bath; distilled water, 480 c. c. m. (14 ozs.  $1\frac{1}{2}$  drs.); nitrate of silver 1.25 grammes. (20 grs.); ammonia carbonate, 5 grs. (1 dr. 11 grs.); erythrosin solution 1:500-35 c. c. m. (1 oz. 2 drs.); ammonia, 4 c. c. m. (1 dr. 8 min.). The plates remains in this bath from 1 to  $1\frac{1}{2}$  minutes, and without being washed, is dried in the dark. Another process for this dye and for the eoside of silver bath will be found under appropriate heads. With all orthochromatic plates work must be done in nearly total darkness. The dye aurin, or rosol acid (the so-called crude aurin), is a compound  $C_{12}$ ,  $H_{14}$ ,  $O_2$  obtained when oxalic and sulphuric acids act upon phenol. Corallin, made by the action of ammonia upon crude aurin, is sometimes sold as such, which when dissolved in collodion furnishes the means to prepare ray filters used in orthochromatic photography. This has been frequently called aurantia collodion. But aurantia is only soluble in water. Aurin dissolves easily in alcohol with a golden yellow color, and collodion keeps it well in solution. It is more accurate to term this article aurin, not aurantia.

**ORTHOGRAPHIC AND ORTHOSCOPIC**—Names given to certain classes of lenses. Probably more for a name, than for any extra intrinsic value they may possess.

**ORTHOSCOPY**—Leon Vidal proposes this word, which may signify the rectification of the tones as they are seen, as giving more satisfaction than the words *iso* or orthochromatism, and besides that of embracing all the different processes classified by their authors, some under the names of isochromatic and others under that of orthochromatic, and in his Manual of Practical Orthoscopy, he treats of the process by which it is possible to correct the scale of inexact tones rendered by ordinary photographs. The possibility of this correction constitutes one of the greatest advancements in photography, since it greatly adds to the precision of this marvelous mode of reproduction. It is impossible to reproduce this important manual here, but the following is a synopsis of the same. 1st. Action of divers rays of light on sensitive silver compounds, and modification in the sensitiveness to these rays by the intervention of colored substances and the use and preparation of colored screens. He prepares four grades of this screen. Commencing by making solutions of aurantia in acetate of amyl (1.); 0.1 aurantia for 200 c. c. collodion at 3 p. c. (2); 0.2 aurantia for 200 c. c. collodion at 3 p. c. (3); 0.3 aurantia for 200 c. c. collodion at 3 p. c. (4); 0.4 aurantia for 200 c. c. collodion at 3 p. c. These four preparations run on glass plates very clean and dry and very horizontally placed, give the desired pellicles. Allow to dry spontaneously and away from dust; and then when dessication is absolute, place the plate in water. In a few moments the pellicle rises and abandons its support; dry between two very

clean sheets of bibulous paper. They can then be cut to the desired size. 2nd. Coloring matters suitable for the orthoscopic correction of ordinary plates. 3d. Uses and formulæ of orthoscopic sensitized baths. 4th. Material for the study and verification of orthoscopic processes. Having in view to place orthoscopic processes, with or without special plates, within the reach of all, the practical as well as the amateur—that is to say, the truth concerning this method, so as to save from disappointment those who practice it without sufficient guides—it is only necessary to use the so-called *iso* or orthochromatic plate to arrive at the desired result.

**OSMOSE**—The tendency of fluids to mix or to become equally diffused when in contact. It was first observed between fluids of different densities, and as taking place through a membrane or intervening porous structure. The more rapid flow of the thinner to the thicker fluid was then called endomose; the opposite slower current exomose. Both, however, are the results of the same force. Osmose may be regarded as a form of molecular attraction allied to that of adhesion.

**OUT DOOR PORTRAITURE**—Is comparatively easy; but the results gained are not usually so pleasing as those of successful indoor work. All that is necessary is to get a suitable place in which to operate. There must be some means of shutting off a portion of the top light. This may be often secured by taking advantage of the out spreading branches of a tree. The position chosen must be such that there will be a somewhat stronger light on one side of the sitter than on the others; by this means there are secured relief and soundness. If a full length sitting or standing figure be attempted, a natural background, the stem of a large tree, ivy covered wall or such like is the best. If heads be done, an artificial background should generally be used.

**OVER EXPOSURE**—See Exposure.

**OXALATE DEVELOPER**—See Developers.

**OX GALL**—The inspissated bile of the ox; used photographically to make water colors take to the surface of albuminized prints. Soluble both in water and alcohol. For wash, it is preferable to dissolve it in equal parts of alcohol and water, and apply to the surface of the print with a camel's hair pencil.

**OXYGEN**—Discovered by Schell in Sweden and Priestley in England in 1774, independently of each other and described as empyreal air and dephlogisticated air. It is the most entirely diffused of all the elementary bodies. It is

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## SALE AND EXCHANGE.

[This department is for the benefit of SUBSCRIBERS who have photographic material, apparatus or books which they wish to exchange, and such wants will be inserted free of charge one time. For each additional insertion we will charge one dollar per month. Dealers advertising in these columns will be charged double our ordinary advertising rates.]

*For Sale*—A genuine and unusually fine Darlot  $\frac{1}{2}$  size Quick-Working Portrait Lens with Central Stops. Excellent for quick portraits in the house. Excellent as a lantern-objective. Good as new. Regular price \$22.00; will sell for \$15.00 net cash. Correspondence solicited. Address, "J. D.," P. O. Box 1522, Boston, Mass.

*For Sale or Exchange*.—A Zentmayer Centennial Binocular Microscope, in first-class condition; 5 eye pieces, Zeiss condenser. Wanted a first-class  $5\times 7$  or  $6\frac{1}{4}\times 8\frac{1}{4}$  modern new camera, with B. & L. shutter and Zeiss lens; or will sell cheap. Lock Box 1017, Decorah, Ia.

*For Sale*—A genuine and specially fine No. 3 Darlot's Rapid Hemispherical lens for  $6\frac{1}{4}\times 8\frac{1}{2}$  plate. Splendid for instantaneous portraits, views, etc. Will cover  $8\times 10$  sharp to corners, with small stop. Price, \$30.00. *Is brand new*. For cash, \$22.50. J. D., Box 1522, Boston, Mass.

*For Sale*— $4\times 5$  Optimus R. R. Lense, fitted with Prosch Shutter, in perfect condition. Price, \$18.00. Address, E. G. Tremaine, 164 State St., Brooklyn, N. Y.

*For Sale*—I have  $4\times 5$  Blair Camera B. & L. shutter, 2 lenses, 12 plate holders and developing outfit for sale cheap for cash. Also No. 3 Kodak. Walter Kimbark, 80 Michigan Ave., Chicago.

*For Sale*—One Entrikin Eureka Bur-nisher, inch roller, and 1 paper cutter, 6 inch, both as good as new. John E. Davis, Butte, Mont.

Amateurs who intend to contribute to the exhibitions should use Willis & Clements' new Rough Surface Cold Bath Platinotype Paper. Nothing has ever approached it for art effects. See ad. on page xv. Yours very truly, Willis & Clements.

*For Sale*.—The following lenses, all new: Beck R. R., No. 5,  $8\times 10$  Iris, \$50; Ross W. A., No. 5,  $10\times 12$ , \$32; Ross Rap. Sym., 9 in.,  $5\times 8$ , Aluminum, with Bauch & Lomb Shutter Aluminum, \$46; Swift Rap. Paragon,  $5\times 8$ , with Bauch & Lomb Shutter, \$39; Morrison W. A., No. 4, 5 in.,  $5\times 8$ , \$9; Busch Pantascope, No. 2, Extreme W. A., List \$30, at \$15; Gray Landscape, No. 3,  $6\frac{1}{2}\times 8\frac{1}{2}$ , \$6; French W. A.,  $5\times 8$  (Importer's Name), List \$20, at \$12; French Single,  $6\frac{1}{2}\times 8\frac{1}{2}$ , \$5; Beck W. A., No. 2,  $5\times 7$ , \$22.50. W. H. Gray, 521 Forest Ave., Oak Park, Ill.

*For Sale*.—A  $2\times 7$  improved Henry Clay camera, fitted with Zeiss lens and B. & L. diaphragm shutter; also a Bijou  $3\frac{1}{4}\times 4\frac{1}{4}$  camera, fitted with single lens—all absolutely new. Will also exchange a set of parlor billiards for photographic material. V., 647 $\frac{1}{2}$  Degraw street, Brooklyn, N. Y.

*For Sale or Exchange*.—A Voigtlaender portrait lens,  $8\times 10$ , which cost \$65; has not been used very much, and with the exception of the brass being tarnished, the lens is in good shape; has a complete set of stops, and rack and pinion movement. Will sell at a bargain. Have also a Gundlach  $5\times 8$  Rectigraphic lense fitted with Bosh & Lomb snutter of aluminum, original cost, \$50, and a Rochester Camera Manufacturing Company's Rochester hand camera,  $4\times 5$ , fitted with an excellent lens, which I will exchange for other goods, or will sell cheap for cash. Fred J. Balch, Rouses Point, N. Y.

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American Agents for Sprange's BLUE BOOK for AMATEUR PHOTOG-  
RAPHERS (the New Photo. Directory), for 1894.



BY ALFRED STEIGLITZ

“ AT ANCHOR ”

—

# THE AMERICAN AMATEUR PHOTOGRAPHER,

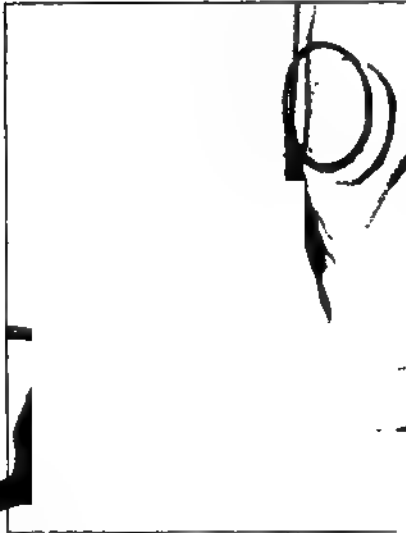
VOL. VII.

JULY, 1895.

No 7.

## Sport, the Pussy Cat.

BY CLARENCE BLOOMFIELD MOORE.



ONE summer, several years ago, I was compelled to remain in town, and yet the business which detained me occupied but a small portion of each day ; so that, being unable to read, through an accident to one of my eyes, and my friends being all away, I began to find time hang rather heavily upon my hands and to feel somewhat blue and unhappy.

Now, the old Romans in their plays, when affairs got terribly tangled, the heroine dead and the hero a prisoner in the hands of the enemy—so mixed, in fact, that even the author of the play could not unaided straighten out matters—were wont to introduce a god from the

wings, who, with a wave of the hand, freed the hero and restored the heroine to life. This lucky arrival was called a *deus ex machina*. Now, my *deus ex machina* at this time was Sport, the pussy cat.

I had for some time been living in a house that had all gone to the seashore, leaving me one afternoon, returning from the office, to find my sitting-room a little Maltese instead of running away, as strange cats are wont to do, rubbed up against my legs, vigorously purring the while, and at length jumped into my lap, where it seemed perfectly at home. Thus began my friendship with Sport, the pussy cat, a friendship which flo

ished without interruption during the entire summer. The owner of the little Maltese kitten, on the point of leaving for the country, had sent it to be cared for at the house of her sisters-in-law.

Each morning after that, when I had rung for my toast and tea and I opened my sitting-room door, there would be a little shriek of delight, with a great pattering and scratching on the matting of the hall, and with a bound the little cat would jump into the air, lighting upon my shoulder, whether I was sitting or standing, when it would begin to walk round and round my head, purring in the

most contented manner. Sport's faculty for balance was really remarkable. Once, just after leaving my bath, the pussy cat jumped upon my bare shoulders, alighting so squarely that no mark of claw was left upon the skin. Upon another occasion, while I was standing near the glass globe of a gas burner, there being a space of less than half a foot between it and my face, the Maltese kitten alighted on my shoulder like a bird, without touching on either side, and began its usual circuit around my head, rubbing against my face, purring with tail high

while reading the few minutes which I had left. I have laid down my book so as not to disturb the little kitten, for Sport, though playful, was very fond of me, and as he circled around my head, I thought at regular intervals it was a difficult matter to get any enjoyment from even the most interesting story. But Sport's fondness for leaping upon my shoulder at all times and places once came near resulting in a very serious accident.

My friend, by chance, had been shut up in the cellar, and when I opened my door I missed the little shriek and the pattering of claws down the hall. Somewhat later the man who always shaved me arrived, and while in the performance of his duties, just as the razor was over the large blood vessels of the neck, Sport, freed from his confinement by the opening of the cellar door, came down the hall like a little whirlwind, and, with a leap, alighted upon my shoulder, at the same time coming with full force against the back of the razor, which, fortunately, struck at an angle, slid along the neck without inflict-



ing a wound. The German barber, white as a sheet, and trembling in every limb, was pushed into a chair with the ejaculation, "Mein Gott, dot vas close."

Now I am a "Photocrank," for such is the disrespectful title applied to devotees of the camera, and I resolved that Sport should contribute to my amusement during this dull and monotonous summer.

Each afternoon upon my return from the office I used to erect in the yard a rude altar composed of two empty boxes, one upon the other, and covering them with a sheet I placed thereon the dear little Maltese kitten as a votive offering in the art of Daguerre. Then, focussing my camera with its instantaneous shutter, I could take whatever poses the pussy might be led to assume. Sometimes Sport, only half entering into the idea, would leap down from the boxes and begin to circle around my legs, purring in the most confiding manner, and upon being returned to his perch, would again jump down and bolt for the cellar.



Once through sheer nervousness he became very sick, and the seance had to be postponed till another occasion. At other times Sport was very docile and allowed me to take

him in pose after pose, some full of action and grace; but the crowning triumph was a "Maltese Cross." The idea struck me in the middle of the night and was materialized the next day, when little Sport, placed upon the sheet covered boxes, in the sharpest focus of a powerful lens, had a harmless and paralytic dog led up to him several times in succession. At first it worked very well, but at last the bright little Maltese seemed to "take in" the situation, and instead of bristling up as before, laid down and began scratch himself. It was evident that I had obtained all the "Maltese Crosses" possible for that day. And so the summer went on. Every clear day little Sport spent an hour perched on the boxes, and each evening I devoted an equal amount of time to the negatives in the dark room.



an unearthly little shriek, and her back, beat a hasty retreat, declaring that she had been attacked by the Evil One.

If over, a lady with a covered e house one afternoon, and when ft little Sport went with her. I saw the Maltese kitten again, was told that an Irish servant, while looking after the furnace in the cellar of the residence of Sport's mistress, once heard feeling something alight upon

## Shutter Photography.

BY DR. HUGO ERICHSEN.

THE intense rapidity of modern dry plates has made instantaneous photography possible, and together with the improvement in lenses, has enabled the amateur to photograph moving objects in a very short time. Animals in motion have been taken in the two thousandth part of a second, and flashes of lightning in less time than that. In order to succeed in taking snapshots the amateur should be provided with a very rapid lens and a shutter of medium rapidity. Ordinarily a shutter that will permit of an exposure of from one-tenth to one-thirtieth of a second will answer.

By Dr. H. E.

By means of such a shutter the amateur may take street views, sea-scapes

with shipping, marching troops, moving animals, and playing children. Generally a shutter of the speed mentioned will meet all his requirements, and only when he proposes to photograph galloping horses, running men, or rapidly moving ships or vehicles, is a shutter of greater speed absolutely necessary. In this case I would recommend a Thornton-Pickard focal plane shutter, which gives a shorter exposure and passes a larger percentage of light than any other form. The speed of this shutter may be increased from one-twentieth to one-thousandth

part of a second, and perfectly sharp pictures of subjects having an extremely rapid movement, as, for instance, flying birds, obtained. The focal plane shutter is made upon the roller-blind principle. It fits at the back of the camera, and the dark slide fits into the back of the shutter. The shutter blind, therefore, works just in front of the plate, and has a narrow slit the full width of the plate, which gives the exposure as it passes rapidly across. This

is the best shutter for extremely rapid work, and possesses the additional advantage of being easily adapted to any camera. I use a Baush and Lomb shutter for my instantaneous work, good satisfaction, but, in my humble shutter made in this country that will stand Thornton-Pickard. At any rate, if there is heard of it. I have tried a number of ed to instantaneous photography, and feel commending the Standard, sensitometer 50, mer's extra fast dry plates Wuestner's exposures are also excellent for indoor work, portraiture. I would fain make experiments plates, if it were not for the expense. I suggest to plate manufacturers that they of their plates, containing one or two samples manufactured by them. As this would and expense, the manufacturers might for such trial dozen of their dry plates. I of moderate means—which takes in and an investigative turn of mind, would more for the opportunity of being able to test the efficiency of the various plates on the market.

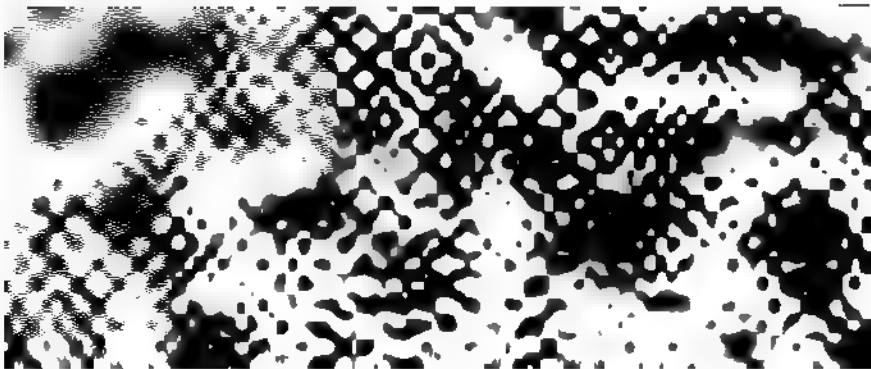
Snap shots should only be taken in bright light, preferably sunlight. This refers especially to instantaneous

and it generally gives opinion, there is not a comparison with the one, I have not yet plates that are adapt- no hesitation in re- Stanley, and Ham- tra rapid portrait flash light pictures or with a variety of would respectfully put up trial packages ples of each of the involve extra labor charge an extra price am sure every amateur

with extreme rapidity. When snap shots are taken in bright diffused light, the time of exposure must be increased. Large stops are invariably used for instantaneous photography, and give the best results. Fresh developer should be used; I prefer metol for this purpose to any other.

Children generally must be taken instantaneously or not at all. Fortunately the amateur is not limited to the hand camera, but may also use the view camera for instantaneous work. Some of the best "snap shots" I ever saw were taken by a gentleman who focussed on a group of playing children, who instantly interrupted their game to see what was up. He grouped them before the camera and pretended to take a picture, whereupon they resumed their playing. Meanwhile he withdrew the slide, after setting the shutter. He watched them intently as they ran about, and, when they were in a favorable position, snapped the shutter. This manoeuvre was repeated several times, and the result was a series of charming pictures, in which the children look natural, as they well might, being taken off their guard. On another occasion he took his hand camera along on a stroll in the country. Arriving at a brook, he sat down in the shadow of willows and watched a little boy and girl who waded in the limpid water. His guileless manner disarmed their suspicions, and enabled him to secure a number of splendid views of them.

The amateur who proposes to take instantaneous pictures must be possessed of patience and judgment. He must, moreover, be able to keep his presence of mind under widely different circumstances. If he loses self-control, he will be apt to snap the shutter before the time, which will result in many spoiled plates. Finders and levers are indispensable aids to instantaneous photography, and every camera used for this purpose should be provided with them.



By F. S. Sedman

"LOW TIDE, NANTASKET BEACH."

## Beginners' Column.

### CHAPTER XXI.—LOCALITY.

BY JOHN CLARKE.

WE have seen that pictorial representations of natural objects are essentially arrangements of lines, and that, to a large extent at least, the degree of success to which the artist attains is dependent on his observance of certain well-known laws or canons in their relation to each other. In this chapter I wish to impress on the student the fact that not less important is the position that those objects occupy, not only in relation to each other, but in relation to the limiting

By Fred. S. Steedman.

lines of the canvas—the edges of the plate.

An ordinary landscape should include five important items, any one of which may contain the *motif*, or dominating power, and to which the others are but accessories. Those are, foreground, middle distance, distance, sky, and principal object; and on the relative positions that those are made to occupy, success or failure largely hinges. By "locality" then I mean the position on the plate occupied by each of those five elements of the picture; and it is strange but true, as may be seen from a study of any collection of photographs either by professional or amateur, that while locality is the part of picture-making over which the photographer has most control, it is the part that is most neglected, or the canons of which are most frequently violated.

The "distance," or rather its limit, the horizon, rarely gets the attention its importance warrants. The point at which, say, the sea and sky appear to meet is always on a level with the eye of the observer, whether he kneel on the shore, or look at it from

Copyrighted by Sarony, 1898.

"BEFORE THE BATH."

the highest tower, and therefore the natural position of the horizon of a picture should be considerably below the middle of the plate, or about one-third from the bottom.

There are, however, exceptions to this law ; cases where a higher horizon is desirable. I do not refer to pictures of mountains or rising ground, because a mountain may reach the top of the picture, and yet the horizon be in its proper place, as may be seen by drawing an imaginary line from the eye through the mountain to where the earth would seem to meet the sky ; but rather to cases where the foreground and middle distance are of such interest that they really make the picture, and where consequently they may, with advantage occupy more than their natural space. But where a horizon higher than about a third from the bottom is desirable, it must on no consideration, be in or very near the middle ; in fact, it should be lifted up to one-third from the top. But this liberty must never be taken with seascapes, marine views, or where a river is represented as running to or from the distance, as the water in that case, instead of seeming to be a level surface is represented as an inclined plane, sometimes steeper than a toboggan slide, with vessels sailing up it.

Briefly stated, the law of the horizon is this : Always, when possible, place it about one-third from the bottom, and, where that may not be, then about one-third from the top ; never, on any consideration, on or very near the middle, and in marine views never anywhere but about one-third from the bottom.

Concentration is another important feature in a picture. By concentration is meant that there shall be only one object or point of special interest, to which all the rest of the included matter shall be subservient, and up to which, as far as possible, the leading line shall lead the eye.

Of considerable importance, too, is the place on the plate occupied by this objective point. It will help the student to understand what I am driving at if he will draw four pencil lines straight across the ground glass of his camera, each respectively one-third from the bottom, top, and each of the two sides. The ground glass will now be divided into nine squares of equal size, but very unequal value, as places on which to place objects of special interest. The center is the weakest part of the picture, and nothing of particular interest should ever be placed in or on it, and weak also, although not so much so are those to the right and left of it.

The strongest points are the crosses formed by the intersection of the lower horizontal with the two vertical lines, and always, when practicable, the principal object of the picture should be on or near one or other of them ; or, where that is impracticable, on one or other of the upper crosses.

"EVENING NEAR DORDRECHT."

By Karl Unger

It cannot be too strongly impressed on the mind of the beginner that no landscape is worth exposing a plate upon that does not include one principal object of attraction or point of interest, and quite as objectionable is one that includes more than one of such points or objects. Concentration is a powerful factor in the production of pictorial effect, and therefore, whatever else the picture contains should not only be in harmony with the principal object, but should also directly guide the eye to it, like a series of streets all leading to the principal square of a city.

Photographers have, especially during recent years, attached too much importance to the covering power of their lenses, believing, apparently, that the larger a plate that a lens of any given length of focus would cover, the better the lens; and the optician has so played into their hands that probably a majority of the landscapes of the present day are made with lenses of a focus not longer than the base-line of the picture, while very many are even shorter, giving angles of from say  $50^{\circ}$  all the way up to  $80^{\circ}$ . No doubt there are subjects where wide angles are admissible, but they are few and far between. Simplicity in composition is the natural complement of concentration, and while it is always charming, it is, especially to the student, very much easier managed than complicated composition.

It may be taken as an axiom, that the less there is in a composition in addition to the principal object or objective point beyond what is necessary to harmonize and lead up to it, and make more pronounced the sentiment of the picture, the better and more effective it will be; and as Nature gives little heed to the canons of art, and the photographer cannot, like the painter, exclude any objectionable feature, the smaller the angle he includes the easier will be his work, and, in nine cases out of ten, at least, the more charming his picture. Instead, therefore, of employing a lens only equal to or shorter than the base line of his plate, he should generally use one half as long again, or, better still, one twice the length, giving an angle of from about  $28^{\circ}$  to  $38^{\circ}$ .

Next in importance to the principal object of a picture is perhaps the foreground, and, curiously enough, next to the misplacing of the horizon line, there is nothing in which photographers more generally err by giving it too much space and too little attention. The foreground of a picture should be like the entrance hall of a well equipped and tastefully furnished mansion; never large enough to dwarf the more important rooms to which it leads, but so furnished as to give an idea or foretaste of what is beyond.

While nothing is more inimical to good pictorial effect than a large stretch of bare or empty foreground, the value of one that is sufficient and suitable can hardly be over estimated; as it may be made, not only

the key to the composition, but to balance and harmonize lines otherwise objectionable, accentuate the distance, and lead the eye to the objective point. I say "may be made" advisedly, as while thus important it is the part of a picture over which the photographer has most control. Suitable clouds that may be photographed along with the landscape are rare as angels' visits, and for days or weeks may be watched and waited for in vain; but in the foreground "the shadow thrown across the path" is simply a question of the position of that sun that can be calculated to a minute. A wheelbarrow, a hencoop, a bush temporarily transplanted, or any other suitable object may be placed so as to fill up a vacant spot, or balance and support a weak line; or, with almost equal ease, an objectionable object may be removed, or displaced sufficiently to keep it out of harm's way. For this purpose a musket ball fastened to the end of twelve or fifteen yards of stout twine is a most convenient addition to one's outfit. It may be thrown over the obtruding branch of a tree so as to draw it out of the field, made to compress a too spreading bush or change it to any desired form, and, indeed, be found useful in a hundred ways.

While speaking of foregrounds, I may take the opportunity of a few words in strong condemnation of a style of picture that is much too common, and which the editors of several of the photographic magazines have not unfrequently palmed off on their readers as good examples of art in photography. The photographer comes across a "beautiful bit." He is on one side of a small lake or pool without a ripple on its surface. On the opposite side are beautiful, and it may be beautifully arranged groups of trees, with the light in such a position that every branch and

By W. B. Post.

"FROM THE FIELDS."



leaf are reproduced by reflection on the surface of the water with a force and detail equal to the objects themselves. The camera is placed in position so that the junction between the real and the reflected objects shall be exactly in the middle of the plate, from, I suppose, some unthought-out idea of fair play ; the one being as good as the other, neither should have any advantage over the other.

The subject is indeed beautiful to look at, probably because the eye ignores the faults and is as much pleased with the color as the form, but the photograph is poor indeed. The foreground is simply bare water, or might have been water if the exposure had not been lengthened so as to impress the abundant foliage, but is really of exactly of the same tint as the sky, and the upper and lower parts of the picture are so exactly alike, that it is a matter of little consequence how they are turned.

This is how not to make a picture of such a subject ; how to make a picture of it is as follows : The camera must be placed so that the junction between the real and the reflected objects is about one-third from the bottom of the plate, and, if possible, at such a distance as to include in the foreground some portion of the near bank. Where this is impossible, a boat should be got or a rough raft constructed ; anything in fact that will float and break up the tame insipidity of a vacant piece of water. Then, just before removing the cap, a large stone should be thrown into the water and the exposure made while the ripple is at the strongest, and the result will be a picture in the true sense of the word, only needing a suitable sky to make it perfect ; but how to best and most easily secure that must be left for another chapter.

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**Book Received** — FALLOWFIELD'S PHOTOGRAPHIC REMEMBRANCERS, for June, 1895, a complete catalogue of all kinds of photographic goods, by John Fallowfield, 146 Charing Cross Road, W., London, England.

**Photo-Ceramic Photography.**—The editors of the *Photogram*, of London, are interested in stirring up more interest in ceramic enamel work than now exists, hoping to introduce it more extensively among amateurs. They had, in connection with Mr. E. J. Wall, the management of the Photo-Ceramic Department at the Imperial Institute Photographic Exhibition held in May this year in London, which included a loan exhibition of the best photo-ceramic work and practical demonstrations.

## English Notes.

BY GEORGE DAVISON.

**T**HE Royal Photographic Society of Great Britain—In the past few years the Royal Photographic Society, the parent society in English photographic matters, has made considerable advance in regard to the number of its members and activity in organization.

One of the latest steps has been to obtain a Royal charter and institute a system of fellowships, the distinction being for the present purchasable by members, but after a certain date only to be granted on qualification plus purchase. Those acquiring the diploma are entitled to add F. R. P. S. after their names. The result has been that new members have joined, and, owing to this increase and other causes, the Society is just moving into more convenient quarters, at No. 12 Hanover Square.

The first papers read in the new premises this month will be by Captain Abney and Professor Roberts-Austin. The influence of the Society was further extended some time ago by the affiliation to the parent body of many of the provincial photographic societies, the members of these latter gaining some advantages in regard to the society journal, the lectures and the annual exhibition.

**The Physics and Chemistry of Development.**—The most recent lectures read before these affiliated photographic societies have been delivered by Mr Bolas, and have dealt very ably and clearly with the subject heading this paragraph. A point worthy of record is that Mr. Bolas seems to favor somewhat the electrolytic theory of development, which has previously received attention also from Professor H. E. Armstrong, President of the Chemical Society. According to this view, it is suggested that the action of light sets up alternating electric currents which separate out the silver from the salts in this sensitive film, and this metal with the

developer and the remaining haloid forms an electric battery which sets up a new action at the expense of the developer.

Mr C. H. Bothamley, in *Photography* of June 6th, takes exception to the theory, and remarks : " Who shall say whether the electrical changes are the result of the chemical, or the chemical the result of the electrical?" Mr. Bolas admits that, according to the theory, " you may get any amount of image from every such small initial reduction," and Mr. Bothamley replies that it is well known that such is not the case, and states further : " If the electrolytic reduction of the silver haloid went on until all was reduced, it is obvious that the image would spread laterally as well as downwards." He also suggests that the spreading of the image which does appear to take place with many plates is more probably due to the scattering of the light, occasioned by the granularity of the silver bromide.

According to Mr. Bothamley's view, light is the great cause that determines the character of a negative, and the influence of the developer is quite secondary.

**Copyright Case**—Mr. Gambier Bolton, the well-known animal photographer, has recently obtained substantial damages in an action against a draughtsman, Mr. Cecil Aldin, who had copied some of Mr. Bolton's published photographs of animals. The artist had the hardihood to contend that in the case of a certain tiger illustration there was a difference in size and in idea between the photograph and the drawing, and therefore copyright was not infringed. Unfortunately for the draughtsman, he had slavishly copied a cancerous growth in the mouth of the animal, not knowing but that it was a natural part of the mouth itself.

**Copyright Union and Amateur Photographer.**—In commenting upon his case, Mr. Bolton hopes that the Professional Photographers' Copyright Union, which has been formed for defensive action against newspaper piracies, will extend its sphere so as to include and admit all photographers, amateur as well as professional. This distinction in photography between amateur and professional, is one of the peculiar circumstances of our practice here. The professional, particularly the mechanical one, looks askance at the multitude of amateur practitioners, who, in his opinion, do for nothing some of the work which might otherwise fall to him professionally ; the amateur, on the other hand, simply looks upon it as so much the worse for the professional if he selects a calling in which he is unable to excel the holiday worker and amusement seeker, and in some cases he accentuates ill-feeling by holding himself superior to the worker engaged in it as a trade.

In exhibitions the local societies arrange distinct classes for amateurs and professionals, in order to encourage timid mediocrity and multiply

medal enticements. In journalism crafty editors have known how to work the unsuspecting gratified amateur for securing cheap illustrations, now that a public greed for photographs, good bad and indifferent, has been roused.

As regards copyright matters it would appear all in the interest of the professional brethren to combine with, or at least to admit, any amateurs, if they will only join in union against piracies and illiberal treatment.

We cannot indeed see where the necessity comes in for the introduction of the word amateur at all, either in copyright unions or in art matters.

Neither in literature nor in art is there any such distinction. Books are written and journals contributed to by men whose chief work lies in some other path, but the only distinction made is when the work done is bad. In painting exhibitions all exhibitors alike put a price upon their productions, and here again no other distinction between good and bad is required.

**Clear Glass Margins for Lantern Slides.**—A lecturer, Mr. J. K. Tulloch, at one of our provincial societies, insists very strongly that all lantern slides should be made and projected with a clear glass margin, which is to act as a standard of white, by which to measure all the intensities of gradations of the objects in the picture. Having tried it in a few instances he is determined in future to have *every one* of his slides with a clear glass margin, to isolate the picture and furnish an idea of what the highest light in the lantern pictures might be. He says: "Those who have worked with pencil, chalk or brush know what a mighty difference a neat, trim and suitable margin of white round a monochrome picture makes." Now this is all very well in its proper place and proportion, but Mr. Tulloch is carried away by his enthusiasm in his newly-practised device with his lantern slides. A "neat white margin" round a monochrome picture or photograph is often the very worst, and very rarely the best and most effective setting. *Each individual case must be considered on its merits and its needs.* And the same remark applies to lantern slides. No one formula for mounting or exhibiting a variety of *pictorial effects* can possibly be universally the best.

**Natural Definition.**—In an American contemporary we observe that Mr. G. A. Sawyer, U. S. N., maintains that the only naturalistic and truthful photographs are those produced with a stopped down lens of 13 inches focus! Mr. Sawyer does not say *how much* stopped down, but he directs his readers to hold up alongside the ground glass of the camera a plain glass plate of the same size and then to focus the image on the screen *just as sharp as the image appears seen with the unaided eye* through the plain glass. Surely Mr. Sawyer is joking at us. Does he not know that the photograph on the flat is no model of the scene, only an illusion

of it? The eye will only focus a few degrees sharp wherever it is fixed. Is one point of perspective to be taken or a hundred points? If a hundred, so as to get all parts imaged sharp on the eye and brain in turn, how is the perspective difficulty to be met and how are the hundred different perspectives to be represented for examination on the flat. If one point of sight, why not one point of focus? If a combined *sharp* mental image of a hundred different acts of eye focussing, why not a blurred and broad effect, as the result of representation of one of those impressions of the many beautiful effects which are instantaneously impressed on the mind, long before any series of cataloguing investigations can be half through or barely begun? In short, why not admit all views to be natural or naturalistic, he to hold to his preference for the petty, pretty details, and others of us to hold ours for what we think more forcibly tells the tale of the greater qualities of natural appearances. Mr. Sawyer might with advantage think for a while about local treatment or definition as being just as much *relative* in the production of a picture as are tone and color.

**A Standard Light**—The Board of Trade has accepted the recommendation of an influential scientific committee for a standard light of ten candle power, as given by the pentane air flame of Dibdin's ten candle argand burner. When legalized by the passing of an act of Parliament this will become the standard in this country.

**The Cyclograph**—This is the name given to a new instrument, designed by Mr. A. H. Smith, for photographing in one exposure the whole or any part of the exterior of vases or other cylindrical objects. The article to be photographed moves forward and on its own axis, upon a turntable, and a dark screen with a narrow slit moves with it in such a way as to expose each portion of the surface of the vase or other object.

**School of Photography**—Although we have in London certain technical photographic schools, such as the Polytechnic, which do useful work, it has been a cause of much surprise and regret that we should possess no institutions of the high and complete character of those in Vienna and other Continental cities. This want seems now likely to be met, for it is proposed by the London County Council to establish a municipal institute of photography, and Captain Abney has, it is stated, been consulted as to the form and scope that the proposed college should take. It will not be a National institution, as in Vienna, but the Technical Education Board of the London County Council is the right body to control such a school of process-work and industrial photography. If suitable teachers can be found, and the experiment is not cramped for want of funds, a large and important industry will be given a very much needed impetus here.

## A Simple Camera Shutter.

BY GEORGE M. HOPKINS.

**D**URING last summer's vacation, the writer, while in the mountains enjoying the scenery and trying to survive an acute attack of photophobia, received a superb lens ordered some time previously, but the shutter was not yet completed. The lens was used with great satisfaction with the cap as a shutter, the only difficulty being that of over exposure and the occasional loss of a subject requiring an instantaneous exposure. When, however, a desirable snap shot subject presented itself, an instantaneous shutter became a necessity, and hence the invention of an exceedingly simple shutter for the emergency.

This shutter, which is here illustrated, has been used since its first application to the camera, notwithstanding the adaptation of the fine shutter belonging to the lens.

Two oblong pieces of pasteboard box, four hair pins, four common pins, a long thin rubber band, a piece of black velvet, and a piece of thread constitute the materials, and the time required for making the apparatus was twenty minutes.

In the center of one of the pieces of pasteboard is formed an aperture to fit over the threaded end of the lens tube, and in the center of the other oblong piece of pasteboard was formed a wide transverse slit, and a piece of black velvet was attached to one side of the pasteboard and carried over the edges around the slit. In the absence of other forms of wire four hair pins, *a*, were straightened, the ends of each one bent at right angles in the same direction and inserted in opposite edges of the pasteboard above and below the lens tube. Two of the common pins were inserted in the front of the lower part of the movable portion of the



A SIMPLE CAMERA SHUTTER.

shutter, from opposite directions, forming a cleat for the reception of the piece of thread, and in a similar way two pins were inserted in the stationary pasteboard. A slender rubber band, *b*, was stretched around diagonally opposite ends of the pieces of pasteboard within the wire arms, *a*, which entered the pasteboard.

This shutter was set by raising the front part so as to bring the lower imperforate portion against the front of the lens tube, thereby shutting off the light, then bringing the thread, *c*, already attached to the cleat on the stationary part, around the cleat on the movable part. The exposure was made by cutting the thread by means of a pair of scissors, as shown in Fig. 1. The focusing was done while the shutter was held open by another thread, *d*, having a loop in it, which was slipped on the front cleat as shown in Fig. 3.

To make a slightly prolonged exposure, the thread, *c*, which held the shutter closed, was cut first as shown in Fig. 2. The looped thread, *d*, which held the shutter open, was cut immediately after it, the time elapsing between cutting the first and second threads being the time of exposure. The rapidity of the shutter is increased by adding another rubber band.—*Scientific American*.

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### A Magnesium Torch.

FROM the *Scientific American*, to whom we are indebted for the illustration, we take the following description of a magnesium torch designed by Mr. George M. Hopkins.

Amateur photographers, and some professionals, find in the flash light a great accession to their photographic properties, inasmuch as it enables them to produce really creditable work at times and in places which would prove disadvantageous if daylight had to be depended upon.

For such subjects as require instantaneous work, the explosive powders are useful, and perhaps in the majority of cases necessary, but for nine-tenths of the work flash lights of the torch type, using pure magnesium powder, without any explosive, answers perfectly, while it has the advantage of producing a less offensive smoke.

The annexed engraving shows an exceedingly simple and very effective torch for burning pure magnesium powder. It is similar to some found at the stores; it differs mainly in the matter of construction and materials. A vial three inches high, and one inch in diameter, forms the receptacle for the powder. The neck of the vial is large enough to receive a small rubber or cork stopper (rubber preferred) having two perforations. In one is inserted a tube having its lower end projecting a

quarter of an inch below the stopper, this end being contracted so that its aperture is about one thirty-second inch in diameter, or about as large as a good sized pin. This tube is curved over to receive the rubber pipe by which the blast is furnished to the apparatus.

In the other aperture of the stopper is inserted a piece of tubing of about three sixteenths inch internal diameter, and a length of three and three-quarters inches. The tubes may be of glass or brass.

A wire spiral bent into a circle and connected at the ends receives a roll of woollen cloth, or better, a filling of asbestos fiber, and the end of the wire forming the spiral is bent at right angles and wrapped around the tube. A quarter inch space is left all around the tube, between the tube and the inner portion of the spiral. The vial is one-quarter or one-half filled with fine, pure magnesium powder, and the fibrous material in the wire spiral is saturated with alcohol. When all the preparations for the exposure have been made, including lighting the alcohol, the operator blows strongly through the rubber tube; the concentrated jet stirs up the powder in the vial thoroughly, and the air escaping through the longer tube carries the powder through the flame, thus producing a spire of flame about two feet high. Several puffs may be made if the subject is one requiring strong illumination.

## A MAGNESIUM TORCH.

The principal point to look out for is to make the contracted blowpipe of such capacity relative to the discharge tube as will insure the comparatively slow passage of the powder through the flame. If the blowpipe is too large, the powder will pass through the flame so rapidly as to fail of igniting. In this way a large proportion of the powder may be lost; but with correctly proportioned tubes the combustion is very perfect.



The writer has taken a number of fair-sized interiors with this torch. Pure magnesium powder can be used in this apparatus with perfect safety, but explosive powders used in a confined space (such as the vial in this torch) are dangerous.

G. M. H.



#### ART IN PHOTOGRAPHY

1

## Bolles vs. The Outing Co., Limited.

The decision in this action has a wide interest to the amateur, inasmuch as it decides, what after all is an almost self-evident proposition, that before any photographer can claim the penal operation of the copyright law, he must himself have strictly complied with its terms.

Shortly stated, the copyright law stands thus. Any photographer can secure the right to bring an action for penalties against any person who uses without his permission a photograph. To secure this right he must register such photo in the proper office in Washington, and place on some visible portion of each of such photos sold by him, his name and place of business, and the year in which the photo was taken and so registered.

The statute gives the form of words, which, if used, will be sufficient ; thus :

COPYRIGHTED, 18—,  
By A. B., of C. D.

The object of giving the year is quite clear, because copyright runs from the date of the creation of the object copyrighted.

Bolles did not place on some visible portion of his photo the words given in the statute or their equivalent. What he did was to stamp with a very obscure, worn out die, faintly, in one corner the words :

COPYRIGHT, '93,  
By Bolles, Brooklyn.

The court held that '93 was not a sufficient compliance with the statute, which requires the year to be indicated by the prefix of the century, and that '93, which might be a numeral, was not an equivalent in law for the year 1893.

The statute being a penal one must be strictly construed. We endorse the Judge's remark.

It is surprising, with such a clear specimen set out in words in the statute, how business men will almost apparently deliberately err.

Amateurs, whose rights are equally liable to be carelessly jeopardized, will do well to note the dictum which Bolles vs. Outing decides.

Into the allegation of the case we have not entered ; as the defendant was not called upon to defend his course, we do not feel any necessity to do so.

**Amended Penalties Section of the United States Copyright Law.**—The bill for amending the penalties section of the United States copyright law introduced by the Hon. James C. Covert, Representative of New York State, residing in Queen's County, was passed by Congress on March 4, 1895, and is designed to protect newspapers and publishers from excessive damages liable to be incurred from the infringement of the law, more particularly in regard to the use of photographs. Revised Section 4965 is as follows:

If any person, after the recording of the title of any map, chart, dramatic or musical composition, print, cut, engraving, or photograph, or chromo, or of the description of any painting, drawing, statue, statuary, or model or design intended to be perfected and executed as a work of the fine arts, as provided by this act, shall, within the term limited, and without the consent of the proprietor of the copyright first obtained in writing, signed in presence of two or more witnesses, engrave, etch, work, copy, print, publish, dramatize, translate or import, either in whole or in part, or by varying the main design with intent to evade the law, or, knowing the same to be so printed, published, dramatized, translated, or imported, shall sell or expose to sale any copy of such map or other article as aforesaid, he shall forfeit to the proprietor all the plates on which the same shall be copied and every sheet thereof, either copied or printed, and shall further forfeit one dollar for every sheet of the same found in his possession, either printing, printed, copied, published, imported or exposed for sale, and in case of a painting, statue or statuary, he shall forfeit \$10 for every copy of the same in his possession, or by him sold or exposed for sale.

Provided, however, in the case of any such infringement of the copyright of a photograph made from any object not a work of fine arts, the sum to be recovered in any action brought under the provisions of this section shall be not less than \$100 nor more than \$5,000; and

Provided further, in case of any such infringement of the copyright of a painting, drawing, statue, engraving, etching, print, or model, or design not a work of the fine arts, the sum to be recovered in any action brought through the provisions of this section shall not be less than \$250 and not more than \$10,000.

One-half of all the foregoing penalties shall go to the proprietors of the copyright, and the other half to the use of the United States.

**Summer Conventions.**—During the months of summer, when business in photographic portraiture is dull, photographers turn their attention to annual gatherings or conventions, where they have an opportunity of comparing notes and observing the new articles put on exhibition by manufacturers. The Photographers' Association of Ohio holds its annual convention July 21st to 23d next at Columbus, O. The President is A. L. Bowersox, of Dayton, O. The Fifteenth Annual Convention of the Photographers' Association of America occurs this year August 6th to 9th at Detroit, Mich., and will be held in the Detroit Museum of Art. Mr. J. Ed. Roesch, of St. Louis, Mo., is the Secretary. A change in the by-laws is proposed, whereby the conventions will be held once in three years instead of annually.

August 20th, 21st and 22d is the date of the Second Annual Convention of the Photographers' Association of Missouri, to be held at Chillicothe, Mo. Mr. Al. Dunlap is the Secretary, and should be addressed at the same place.

**The Amsterdam Photographic Society of Amateur Photographers** holds an International Photographic Exhibition in Amsterdam, Sept. 8-22, 1895. Address the Secretary of the Society, Handboogsbrat 2, Amsterdam, for blanks and information.

## CORRESPONDENCE.

TO THE POINT.

MY DEAR MR. STIEGLITZ:—I have just returned from Florida, and find the three extra copies of the AMERICAN AMATEUR PHOTOGRAPHER containing Mr. Davison's criticism on the competitors in your artistic composition, which you so kindly sent me. I wish to say that in each point where Mr. Davison criticises my work unfavorably he hits the nail full on the head; and if we had over here such a worker as Mr. Davison, and such a just, fearless and competent critic, combined with workers who would give heed to his counsels, the cause of amateur photography on this side would be materially advanced.

Sincerely yours,

CLARENCE B. MOORE.

PHILADELPHIA, *June 21, 1895.*

## SECOND NATIONAL PICTORIAL PHOTOGRAPHIC COMPETITION, 1895.

## . CONDITIONS.

Only competitors residing in either the North or South American Continents will be eligible to enter this competition.

Every competitor shall send in four prints.

The pictures submitted must be exposed, developed and printed by each competitor without assistance.

At the close of the competition the mounted prints will be sent to London, England, and judged there by two acknowledged leaders of pictorial photography. Their verdict will be final.

Each competitor is required to pay the AMERICAN AMATEUR PHOTOGRAPHER an entrance fee of five dollars at the time the prints are sent, the aggregate amount, after the deduction of expressage expenses to and from England, to be used in the purchase of three prizes of silverware, appropriately inscribed; fifty, thirty and twenty per cent. to go to the first, second and third prizes, respectively.

In case only two prizes are awarded, the division to be sixty and forty per cent.; if only one prize, the winner to get all.

After the judging is completed and the prizes are awarded, all the pictures will be returned to this country and the collection exhibited, from time to time, in the principal cities of the United States, and finally returned to the contributors.

In case there should be less than six entries the competition will be declared void, and the entrance fee and submitted photographs will be returned to the senders at their expense.

In case the pictures submitted are regarded by the judges as below the required standard the pictures and entrance fee will be returned, less the *pro rata* cost of transportation.

No entry forms are required, but competitors must send a list of prints, each to be marked on the back with an assumed name or symbol, and numbered, the list to be enclosed in a sealed envelope bearing on one corner the same name or symbol that is put on the prints.

The prints must be mounted, the package addressed and sent prepaid to "American Amateur Photographer Pictorial Competition," 239 Fifth Avenue, New York.

All entries must be in by October 15th, 1895.

### "AMERICAN AMATEUR PHOTOGRAPHER" BEGINNERS' COMPETITION.

For the best photographs made by beginners, we offer the following prizes:

*First Prize:* Fifteen dollars' worth of photographic stock.

*Second Prize:* Ten " " " " "

*Third Prize:* Five " " " " "

One year's free subscription to the AMERICAN AMATEUR PHOTOGRAPHER will be awarded to each of the next seven competitors in the order of merit.

#### RULES.

*Rule 1.* All entries must be forwarded to Alfred Stieglitz, 162 Leonard street New York, and marked "Beginners' Competition."

*Rule 2.* The name of photographer, with title of picture, to be legibly written on back of each mounted photograph.

*Rule 3.* The competition is only open to those who started practicing photography since July 1, 1893.

*Rule 4.* All pictures must be sent prepaid.

*Rule 5.* The whole of the work must be that of the competitor, and must be mounted.

#### NOTES.

The editors reserve the right of publishing reproductions of any of the photographs submitted.

No competitor shall receive more than one prize.

Pictures will not be returned.

All pictures entered for competition must be received by October 15, 1895.

Judge: Alfred Stieglitz.



# THE AMERICAN AMATEUR PHOTOGRAPHER.

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A Monthly Review of Amateur Photography.

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No. 7.

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ALFRED STIEGLITZ.

EDITORS

F. C. BEACH.

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## Editorial Comment.

*Our Frontispiece.*—"At Anchor," by Alfred Stieglitz, speaks for itself. It is a pretty bit of Dutch coast scenery. The picture is pleasing, but lays no claim to any great art value. The negative was taken at Katwyk, Holland, during Mr. Stieglitz's trip of last year. This picture is one of the set which gained the maker of it the AMATEUR PHOTOGRAPHER gold medal in London last February.

*The London Salon, 1895.*—Messrs. Stieglitz & Eickemeyer, the two American members of the "Linked Ring," under whose auspices the London Salon is annually held, have been unofficially requested to act as American agents for the coming exhibition. Mr. Maskell writes: "We hope to see America well represented. Of course, what is wanted are pictures with originality; something out of the common dead level, etc., etc." It is our sincere desire to see the United States well represented at the leading photographic exhibition of the year. If pictorial photographers will be kind enough to send their best work to the above mentioned gentlemen, they will be pleased to forward it to London in time for the Salon. If intending exhibitors are doubtful as to whether their work is good enough let them send it along, and the two gentlemen in question will judge of the advisability of sending the pictures to England or not. Messrs. Stieglitz's & Eickemeyer's voice will not be final regarding the entrance of the pictures to the Salon, but they will be submitted to the

General Committee in London for final approval or rejection. Intending competitors will please write us for entry forms, filling these out and forward all matter prepaid to Alfred Stieglitz, 162 Leonard street, New York City.

*Mr. Clarence B. Moore's Letter.*—On another page we present our readers with an extract from a letter received by our editor from Mr. Moore, one of America's most prominent amateur photographers. We sincerely agree with all that Mr. Moore says about Mr. Davison's criticisms. They are fearless and impartial, and carry weight, as Mr. Davison has proven by his own work that he stands amongst the very foremost of pictorial photographers. It is certainly a great pity that most of our workers over here cannot stand fair criticism. Fair criticism ought certainly help those whose aim is a serious one; we may not always agree with a criticism, but we always listen to one, and rarely without some benefit.

*Our Second Artistic Competition.*—Intending competitors to the Second Artistic Competition will be glad to hear that Mr. J. Craig Annan, of Glasgow, has kindly accepted the position as sole Judge. It is hardly necessary to comment upon Mr. Annan's standing in the pictorial photography world; he is accepted as its leading representative. Mr. Annan writes: "—— I shall be very glad to act as judge in your Artistic Competition. I can promise you that I shall give the pictures my most careful consideration."

Full particulars of this competition will be found upon another page, and we sincerely hope that all our first-class workers will be amongst the entries.

The pictures will be sent to Mr. Annan with no marks except mottos upon them, similar to the method used last year, when Messrs. Davison and Robinson were kind enough to do the judging.

This competition is certainly the foremost in America, and deserves recognition from all those interested in the art.

Let us hear from you!

*"American Amateur Photographer" Beginners' Competition.*—On another page will be found full particulars and conditions regarding this new competition of ours. We have been repeatedly requested to encourage beginners, and have come to the conclusion to open a competition for such amateur photographers who have not practiced photography for more than two years. In order not to depreciate the value of the AMERICAN AMATEUR PHOTOGRAPHER medal, which has thus far been only given for the highest class of pictorial photographic work, we offer special prizes, as announced. Our editor, Mr. Alfred Stieglitz, will be the sole judge. No prizes will be withheld. The competition is open to the world. We

hope that all beginners who are interested in pictorial work will be amongst the entries.

*The Camera as a Flatterer.*—*Puck* in a late issue portrays in its usual facetious style the course of two lover frogs courting a female frog. intended to illustrate the fascinating effects of the camera. The camera frog displaces in her graces the first love; he photographs her with a hand camera for a three-quarter face, then walks off to the dark room, develops the plate, makes a print and returns, showing her the picture. It is so horribly distorted that she becomes provoked; her first love watches her, approaches her, and carries her off as his bride. The camera frog being foiled, is maddened by the failure of his instrument, throws it on the ground and smashes it to pieces with a club. We presume the moral intended to be illustrated is the prevailing tendency of women to protest against unretouched photographs of themselves. Nothing to them is so repulsive as the reproduction of minute blemishes on the complexion or a false rendering of the color of the hair.

*Out Door Portraiture.*—During the hot summer months the practice of out door portraiture is a very easy branch of photography to take up. The best time of day is towards sunset, when the light is soft and does not strain the eyes. Place the subject in the shade of a building facing an open view of the sky and modulate the top light by an over head screen; a plain background of a black shawl or of brown cloth can be used. If a rectilinear lens is employed and a rapid plate, the lens stopped to f-8, an exposure of a second or so is sufficient. Sometimes the presence of mosquitos and flies interfere with the comfort of the subject during the operation, but as a general rule, small, off-hand portraits taken in this way are the most natural and pleasing, and many will find the practice of out door portraiture an interesting summer amusement.

*An Oversight in the "American Amateur Photographer," June Number.*—Through an oversight, the article "Dreams of Sir Walter Scott—Melrose Abbey, Abbotsford, and the Old Castle at Edinboro'," in our June number, was not credited to Miss Alice Burke, of New York. We sincerely express our regrets.





## Society News.

**Society of Amateur Photographers of New York.**—*Regular Meeting, Tuesday Evening, June 11th.* The meeting was called to order at 8:30, President C. C. Roumage in the chair. Minutes of the previous meeting were read and approved. The first matter of interest was the report of the Chemical Committee, by its Chairman, Dr. James H. Stebbins, Jr. He remarked that a modified process of platinotype printing had been lately introduced by Messrs. Willis & Clements, of Philadelphia, for printing on silk badges, handkerchiefs, linen, etc. They send out two bottles marked A and B, the following being the directions for use.

**Sensitizing.**—Take of the A solar iron 1 part, of the B solar iron 1 part. Mix just before applying to the fabric. Observe that no platinum is in the sensitizer.

Pour the mixed solution into the saucer and nearly saturate a small piece of sponge with the solution, and go gently over the part to be sensitized. Dry it slowly. When dry it can be printed, and it is better to do so in sunlight and at direct right angles.

**Developer.**—Dissolve 30 gr. platinum salt in one ounce water and keep it as "stock."

To develop, take of the stock oxalate of potash developing solution 100 minims (the same as used for "black tone" paper prints); of the stock platinum solution 30 minims.

This developer can be applied to the exposed fabric by means of a small sponge. The image will appear in a few seconds, and the development may be continued until the print is of the desired strength. Wash in acid water, and finally, well washing in plain water completes the operation.

Dr. Stebbins purchased the solutions from the agents in New York, the Obrig Camera Co., and discovered by analysis that Solution A was composed of:

Ferric oxalate.....	28.00 per cent.
Chlorine water.....	21.50 "
Water.....	50.58 "

Solution B contained:

Mercuric chloride.....	0.6 per cent.
Water.....	99.4 "

For sensitizing, mix A and B in equal proportions.

The sensitizing solution will remain fresh for a few days.

To develop the prints, two solutions were necessary, viz.:

Saturated solution of neutral pot. oxalate.	1.
Potassium chloro platinite.....	6.2 per cent.
Water.....	93.8 "

These solutions are mixed in the proportion of 2 c. c. of No. 1 to 6. 6 c. c. of No. 2.

The developer may be either applied with a camel's hair brush, or by immersion.

After the print is developed, the silk or cloth bearing the image is dipped in a dilute solution of water and muriatic acid, which fixes it. The prints thus made will not wash out.

It is highly important that the quality of the ferric oxalate should be of the proper strength and grade. The way Dr. Stebbins recommended it should be made is as follows:

Ferric chloride is first dissolved in water, then precipitated out of the solution by the addition of ammonia. The solution is then boiled to drive out the ammonia and strained through a linen strainer. The filtrated salt is now washed carefully until the ammonia and chlorine are entirely eliminated, which can be ascertained by testing the wash water with a nitrate of silver solution.

It is well to have a slight excess of oxalic acid in the iron solution.

Dr. Stebbins also stated that he had tested lately two new toning solutions recently put on the market for toning gelatine chloride prints. One was called Thiotone and the other Una.

He ascertained that "Thiotone" was an ammonia sulphide solution which would not make the prints permanent, and the "Una" contained a tartrate of lead with traces of citric acid.

He could not advise the use of either solution.

The committee was thanked for bringing the results of these investigations before the Society.

Mr. F. C. Beach then exhibited an ingenious magazine hand camera, invented by Mr. Josephus Plenty, of Jersey City, N. J. Mr. Plenty, being present, was invited to explain its working, which he did. His failure, on a trip to Dakota, to secure but 15 or 20 pictures out of 100 exposures with a Kodak, led him to devise a hand camera by which he could make nearly automatically 100 exposures on 100 plates.

Upon the outside of the camera on one side was a folded crank. To manipulate, the crank is opened, and in making one revolution the plate is put into position, the finder mechanism raised out of the way, and the exposure, by the shutter, made.

In the rear of the camera is the compartment for the storage of plates. They are removed from the plate box and placed film downward one upon the other, with out any protecting carrier or sheath.

When the back is closed, the bottom plate is caught by the hooks, one on each side, traversing forward and back in a recess, and is drawn forward from under the pile and then guided upward into a vertical position ready for exposure. After this other levers and devices draw it upward at an angle till it falls flat, film side upward, on the pile of exposed plates, located directly above the pile of unexposed plates. The last plate exposed will always be found at the top of the pile. Suitable miniature shutters and doors are arranged to work automatically for excluding light from the piles of unexposed and exposed plates, during the time the plate receives its exposure. The second feature of the apparatus is a movable finder, the size of the plate (4 x 5), consisting of a mirror moving on a hinge secured to the under side of the top of the camera. When down behind the lens at an angle of forty-five degrees, it reflects the picture upward on the 4 x 5 ground glass set in flush with the upper surface of the camera; the focus is thus obtained by moving the lens in the usual way. At the time the exposure is made, the turning of the crank raises the mirror upward through levers on the side and cams on the crank until it is parallel with the under side of the top of the camera; then the shutter operates automatically and makes the exposure by means of another lever engaged with a second cam on the shaft of the crank, and the following moment the mirror drops by gravity, ready in position for one to see the next picture wished to be taken. The finder feature and automatic release of the shutter seemed to be open to criticism because it is weighty and unnecessary. But the ingenious devices for transferring and putting

the plates into position found most favor with those who examined it. Mr. Plenty stated he preferred the use of thin plates and those whose edges were slightly smoothed off. In trying the camera he found the films of the plates were not scratched by reason of the rubbing action in withdrawing the under one from the pile above.

The President thanked Mr. Plenty for exhibiting his apparatus.

Mr. Beach also showed a drawing of a new frame for holding transparencies and other pictures, invented by Mr. M. C. Julien, of New Bedford, Mass. The body is of wire, supporting at each corner two spring clamps which slide over the wire and the picture, and support it inside of the wire portion.

The President called upon the Committee on Progress of Science and Art for its report. Dr. Janeway stated that Mr. Beach, of the committee, had made some investigations in regard to the patents issued on apparatus, etc., upon the subject of "photography by artificial illumination," and would give the Society a resumé of what he had discovered. Mr. Beach said he had looked up the patents from 1790 to 1867, and found the first patent granted for an electric lamp was in 1858.

No. 20,255. May 18, 1858. Electric Lamp. H. M. Collier and H. N. Baker Binghamton and New York, N. Y.

First patent in the United States on photography by artificial light was No. 31,444, patented February 19, 1861, by Paul F. Dodge and William S. Dodge, West Cambridge, Mass., entitled "Improvement in Taking Pictures by Artificial Light." The claim is as follows: "The combining with an artificial light, and one or more series of reflectors, of an intercepting medium or plate, when so arranged with respect to the object and the light and reflectors as to intercept or soften the dazzling rays from the light, and allow the unobstructed rays to pass from the light upon the reflector, and thence upon the sitter, substantially as described.

"The peculiar arrangement of the upper and side reflectors together, so that the side reflectors cast their reflected rays upon the object, while the upper reflector casts not only the rays thrown upon it by light upon the object, but also throws upon the object the reflected rays from the side mirrors, all as set forth."

The apparatus appears to be suspended from the ceiling. It will be noticed that there is marked similarity in the description to that of the modern method of photographing by reflected electric light, showing that the idea is not by any means broadly new.

Patents Nos. 45,654 and 45,370, by E. Soustadt, Loughborough, Eng., December 6, 1864, are the first mention of magnesium, and refer to its manufacture and purification.

No. 54,266. April 24, 1866. Preparing Magnesium for Burning. By Chas. H. Wing, Newton Corner, Mass., assigned to the American Magnesium Company, of Boston, Mass. The coil may be supported on a horizontal wire while burning. Claim: "The forming of magnesium wire or ribbon into the spiral coils herein described."

No. 54,442. May 1, 1866. Magnesium Lamp. By R. H. Thurston, Providence, R. I. The lamp has feed rollers operated by clockwork, with scraper to scrape off ashes from the rollers. Magnesium ribbon is used.

No. 55,393. June 5, 1866. Magnesium lamp. By R. H. Thurston, Providence, R. I. Ribbon or wire of magnesium is used. The feed motion is derived by a stream of falling sand falling on periphery of a wheel, on the hour glass principle.

At a future meeting I shall endeavor to complete the record to date.

Dr. Janeway showed a special, very slow printing-out foreign paper called Voluspuck, sold by Mr. Humerman, 23 Cedar street, New York, which is placed under a negative and printed out in sunlight to the degree of darkness wanted. No further treatment is required, except to keep it in a moderate light. The same party

also has a very pure odorless brand of albumen paper, which is prepared from the albumen of freshly opened eggs, called the T. & B. albumen paper. A sample colored green, well adapted for marine pictures, was shown.

He then referred to the metol and hydroquinone developer, stating that there was something about the combination that prevented the solution from keeping well. In a few days after it was mixed the color would change to a light red and then to very dark red.

A developer made with glycine and metol was remarkable for its keeping qualities. Glycine dissolves very slowly in cold water. The easiest and quickest way of dissolving it is by using hot water. First a solution of sodium sulphite and water is made, testing 30 degrees by the hydrometer.

The developer is made by using

Sulphite solution.....	10 ounces.
Metol.....	90 grains.
Glycine.....	80 grains.
Carbonate potash solution, testing 30° by hydrometer.....	10 ounces.

This Dr. Janeway found kept remarkably clear and only turned a light yellow color, even after long exposure to the air. The sulphite of soda should be chemically pure; he found samples of foreign manufacture would leave a sediment in the bottom of the bottle, but the Walpole specially prepared sulphite fully dissolved, and he advised its use.

Mr. Wm. M. Murray endeavored to make out that none of the new developers or their combinations were of any value—he had never seen any results shown at the Society rooms that were satisfactory to him. He preferred to stick to good old pyro regardless of its staining qualities. Mr. Charles Simpson spoke very strongly in favor of the metol developer, especially for lantern slides. It must not be used too strong, and care must be taken to get the right exposure, then it was easy to develop slides one after the other with perfect gradation. He could develop eight slide plates in two ounces of developer and keep on, by adding a drachm of the fresh metol occasionally to the used solution. He thought it yielded slides of remarkable clearness and freedom from fog or stain, and in proof of its value said that more than half of his collection of slides on Norway were developed with metol. He thought it was the most economical developer extant. Mr. Murray contended that blacks in metol developed slides were too strong.

President Roumage remarked that he had called on Charles Wager Hull several times, and found he used metol and hydroquinone developer and preferred it to any other. Mr. Beach had observed that there was no difficulty in bringing out the detail of the image on the surface of the film with the metol developer, it was remarkable for its rapidity in doing this; it is only necessary to know, for each brand of plates, how long the plate should be kept in the developer after the details are out, until the right or desired density is obtained. This depends somewhat on the coating of the film and upon the judgment of the operator, and varies according to the kind of plate used.

The President announced that the selected set of American slides sent to England in 1893 would be exhibited at the last slide exhibition of the season, on June 21st. Also that notice had been received of a National Amateur Photographers' Exhibition, to be held in Washington, D. C., July 1st, 2d and 3d.

He said there would be no more regular meetings till fall, and hoped members would bring back many good things then, as the result of their summer work.

Mr. Charles Simpson stated he had heard a Committee on New Quarters, consisting of Rob't A. B. Dayton, T. J. Burton and W. E. Johnson had been appointed, and thought members interested should be on the look out for desirable locations and report to the committee.

It was thought the present rental was too high, and that better facilities for work with a studio attached, could be obtained elsewhere. The meeting then adjourned.

*Exhibition of Lantern Slides, Friday Evening, June 21st.*—The collection shown this evening was a selected set from the work of several clubs sent abroad for exhibition in the fall of 1893. There was much variety in the selection, including pictures of New York City, a Louisiana planter's residence, fine cloud effects, marine views, Colorado and Alaska scenery and interesting genre pictures. Mr. William M. Murray presided acceptably at the screen. It was evident to experts that since this collection was gotten up there has been quite an improvement. The slides of the set are to be distributed among the various contributing clubs during the summer. In September it is expected the slides sent to the American Lantern Slide interchange by the Photographers' Society of Japan will be exhibited before the Society.

**Photographic Society of Philadelphia.**—*Stated Meeting, Wednesday, May 8th.* Vice-President Charles R. Pancoast in the chair. The report of the Board of Directors for the month showed that four new members had been elected and one had resigned. The standing committees were announced. April 17th, Mr. W. H. Rau gave an illustrated lecture on "The Vessels of Our New Navy." April 24th, Prof. A. Heilprin read an interesting paper on "Photography and Geographical Exploration." On the same evening the slides of the St. Louis, Bethlehem and Schuylkill Camera Clubs were exhibited. May 1st, Mr. Wm. N. Jennings exhibited a series of slides illustrating experiments in photographing lightning, and Mrs. Benjamin Sharp gave an illustrated talk on "Out of the Way Places in Europe," showing a number of interesting slides from negatives by herself and husband, Dr. Sharp.

A communication in regard to "Standards" as applied to photographic apparatus was read from Mr. S. Pector, one of the Assistant Secretaries of the French Photographic Society. He was glad to see the Philadelphia Society was endeavoring to effect certain standards. It was the purpose of the International Congress in Paris, 1889, and Brussels, 1891, to have the standards adopted and sent a copy of the book issued by the Congress to the Society.

Mr. John C. Browne then read the following paper on

#### OLD-TIME NEGATIVE PROCESSES.

At a meeting of the Photographic Society of Philadelphia, Jan. 9, 1895, your attention was called to the subject of "Old-time Negatives and How They Were Made," but owing to want of time only the wet plate process was described, leaving the consideration of dry-plate negatives for another evening.

In the early days of the wet collodion process, before reliable dry plates came into use, it was necessary to carry a portable dark room into the field and finish the work on the spot, which required the use of a quantity of chemicals and the treatment described in the previous lecture.

Thirty-five years ago dry plates were prepared by the wet collodion process or by the use of albumen. In either case the collodion or albumen was used for holding the sensitizing salts. The manipulation required for the preparation of dry collodion plates was practically the same for all processes. The first part of the process, viz., the sensitizing of the collodion in the nitrate of silver bath and afterwards get-

ting rid of the free silver solution on the plate by repeated washings, first in distilled and afterwards in ordinary water, being common to all, a preservative, as it was called, being afterwards applied, its object being to fill the pores of the wet collodion film with a suitable substance, which being afterwards washed out from the dried film previous to development, left the film somewhat in the same condition as the original wet film, and enabled the developer to act upon it in a similar manner. It was this organifier or preservative which gave the name to the particular process used, and hence the term tannin, malt, coffee, resin, beer, gallic acid, milk, albumen, tea, as applied, simply indicated that one of these preservatives had been used in the preparation of the plate. It is not to be supposed that the result in the finished negative was the same, whatever preservative was selected. On the contrary, each one gave marked qualities peculiar to itself, and consequently each one had its adherents as being *the* process, provoking just as much discussion and rivalry as exists in the use of the various commercial plates of to-day.

In the albumen process "pure and simple," the treatment was practically the same, the iodizing or sensitizing salts being held in solution in the albumen instead of collodion, the plate being coated with the iodized albumen, which required very delicate manipulation, as the plate had first to be accurately leveled and the albumen applied by pouring on a small "pool" in the center of the plate, guiding it with a glass rod to the edge, draining off the surplus, and when set, drying afterwards by gentle heat. The plate was then made sensitive in the nitrate of silver bath, and afterwards treated as the collodion dry plate, with this exception, that gallic acid was almost exclusively used as a preservative. There was so much care required in the preparation of these plates, owing to the "tacky" nature of the albumen—dust or any floating particles collecting on the surface, making the resulting negative anything but satisfactory—that a modification of it was introduced by Colonel Taupenot, in which, instead of flowing the albumen on the plate as before described, the plate was first coated with collodion and, after sensitizing and washing, was covered with the albumen, as I will hereafter describe. And in this case the whole manipulation was rendered very much less difficult, there being little danger from defects caused by dust, etc., as these substances would sink through the albumen and find a resting place in the porous collodion film below. The application of the iodized albumen was much more readily accomplished, as the collodion substratum or film being moist from the washing, the albumen could be flowed over the plate with great ease. The sensitizing of the collodion film previous to the application of albumen was not absolutely necessary. A plate coated with plain collodion and simply washed until the ether lines disappeared, and then coated with the albumen, would answer as far as facility in coating was concerned, equally as well as Colonel Taupenot's process, but it is beyond question that the iodide of silver in the collodion, formed by the nitrate bath, not only helped to reinforce the darks of the finished negative (the developer working through and acting on the iodide), but the opacity and yellow color of the film prevented anything like back reflections from the plate or blurring in the high lights. And to-day these plates will hold their own as far as maintaining the detail and soft tones of the high lights under the most prolonged exposure against any "backed" or double-coated plate of the present time.

The next variation in the preparation of dry plates was the introduction by Messrs. Sayce and Bolton, of the Liverpool Photographic Society, of the *collodion-bromide* plate. In this process, instead of forming the sensitive iodide or bromide of silver by immersion of the salted collodion in a nitrate of silver solution, as in the processes before described, this intermediate step was omitted and the nitrate of silver in due proportion added (in alcohol solution), to the collodion containing the requisite quantity of bromide and an emulsion formed (a principle similar to the present method of making gelatine dry plates), and the plates coated with this, afterward washed to remove free salts. As there was usually an excess of bromide, the plate was finally coated with one of the before mentioned preservatives and dried. These plates being composed entirely of bromide of silver, required "backing" to prevent halation. They were fairly sensitive for those days, and established and maintained a good reputation for many years.

About the year 1876 *washed collodion emulsion* came into use. It was essen-

tially the old "collodio-bromide," with the modification that the emulsion, instead of having the free salts extracted by washing, after coating the plate and a preservative applied, the emulsion was washed by proper methods, and the preservative or organifier added as well. It was then only necessary to coat the plate with this emulsion, and when dry it was ready for exposure, no treatment after coating being necessary. This reduced the labor of preparing plates to a minimum, and excellent results were obtained in many cases. However, it was liable to develop "spots." Their origin being difficult to trace and a remedy hard to find, some enterprising experimenters prepared their own silver emulsion, but a large number purchased their supply from stock dealers. While upon the subject of washed emulsion, credit should be given to two of the members of this Society, Mr. Lewis T. Young and Mr. D. A. Partridge, who were able to place in the hands of photographers a most reliable article.

For many years the rivalry among these old processes continued, and many a hard battle was fought to demonstrate the superiority of some pet process, until the advent of the commercial gelatine plate caused a cessation of hostilities. A truce was declared, the old dipping baths, collodion bottles, drying racks, etc., were placed on the retired list, and the war now wages between rival gelatine plates and what constitutes the best method of developing them.

To give some idea of the dry plate processes in use about 1860-61-62-63-64-65, mention will be made of a few of them.

*Malt.*—Mix 7 ounces well bruised malt in 24 ounces hot water, keeping the temperature from 155° to 158°; place the pot containing the infusion before a moderate fire for half an hour allowing the temperature to fall to 138°, and the solution has acquired a sweetish taste; remove some distance from the fire and cool slowly for two or three hours, stirring frequently; filter. The solution should be quite fluid, and of the color of pale sherry. Use a fluid collodion. Excite in a bath of 35 grains nitrate of silver to each ounce of water. Neutral. Wash off all the free silver under a tap, until the greasy appearance disappears; drain for a few moments on a pad of thick blotting paper. Before the film begins to dry, pour over it the malt solution; wipe the back of the plate and dry by artificial heat.

To sensitize, place the exposed plate in a dish of water for a few minutes, then dip in a bath of nitrate of silver, 25 grains, water, 1 ounce. Develop with iron or pyro and ammonia.

*Milk.*—Take 29 grains of condensed milk to each ounce of water; dissolve, filter, and pour over the collodionized plate. Same developer as malt.

*Tannin.*—Use an old sample of red collodion, nitrate of silver bath, 45 grains silver to each ounce water, acidified by 3 drops of glacial acetic acid. When the plate is sensitized, wash in a number of dipping baths containing distilled water. If little washing is done the plates will be more sensitive, but will not keep. Then drop in a bath of tannin 15 grains, water 1 ounce, which has been filtered carefully. Dry by artificial heat. Developer, pyro, citric acid, and silver.

*Coffee.*—To make preservative: Take 1 teaspoonful of ground coffee, add to it  $\frac{1}{2}$  pint boiling water; allow the mixture to stand for 10 minutes, filter, and use cold. A little sugar was often used in the solution with good results.

#### *Tanno-Gallic Preservative:*

Water.....	1 ounce.
Tannin.....	10 grains.
Gum arabic.....	6 grains.
White sugar.....	4 grains.

Mix together, and add 1 drachm of a 24-grain solution of gallic acid dissolved in alcohol.

*Albumen*—Red collodion, acid nitrate bath 40 grains strong; sensitize. Wash in water until oily lines disappear. Preservative:

Albumen (Acklands).....	1 ounce.
Water.....	3 ounces.
Ammonia.....	3 drops.

Filter and pour over the sensitive plate; drain, and apply a second time. After the second application wash the plate under a tap. Then flow with:

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Nitrate of silver.....	30 grains.
Glacial acetic acid.....	15 drops.
Water.....	1 ounce.

Let this solution soak into the film for a few minutes, then wash off and dry. Exposure, four times wet.

These plates will keep for two weeks. If before drying the plate is flowed with a 3 grain solution of gallic acid to each ounce of water, they will remain in good condition for years.

Develop with pyro and carbonate of ammonia; strengthen with pyro and silver.

*Taupenot Albumen Process.*—Albuminize the glass, old red collodion, sensitize in silver bath, 45 grains to each ounce of water; wash thoroughly in water and place in a 10 grain solution of salt and water. Wash in water, drain, and flow with iodized albumen, made as follows:

Whites of 10 eggs, concentrated ammonia,  $\frac{1}{2}$  drachm: dissolve 60 grains iodide of ammonia, 10 grains bromide of ammonia, in 2 ounces water; add to the albumen, and beat with a wooden spoon to a stiff froth; let it settle for one night, and pour off the albumen for use. Let the first application run off the plate, flow again, drain, and dry. Plates in this condition are insensitive to light, and will keep any length of time. Up to this point all the operations can be conducted in white light. To sensitize:

Nitrate of silver.....	45 grains.
Water.....	1 ounce.

To each ounce of solution add  $\frac{1}{2}$  drachm of glacial acetic acid. Dip the prepared plate in this bath for not more than one minute. Wash well in water, and dip in a 10 grain solution bromide of potassium; wash under the tap for one-half a minute; drain and pour over the plate a 3 grain solution gallic acid, to each ounce of water. Dry without much heat.

*Development.*—Wet the plate with water; flow with a 3-grain solution of pyro to each ounce of water until the shadows appear, then add a drop or two of citric acid and silver solution, which will give the proper density. These plates can also be developed with alkaline pyro, and density given after detail is out with acid silver solution and pyro.

*Fix in Hypo.*—In this process the albumen being coagulated in the nitrate bath, the film becomes very hard, and if carefully handled no varnish is necessary.

*The Gum Gallic Process* was probably the most rapid of the dry collodion bath plates, especially if the collodion was highly bromized and a strong nitrate bath used. In this case and when *freshly* made, these plates were quite as sensitive as the wet process on a well-lighted subject, alkaline developer being used. This process, up to the application of the preservative, was similar in its manipulation to those before mentioned, the preservative being composed of

Gallic acid.....	3 grains.
Gum arabic.....	20 grains.
White sugar.....	10 grains.
Water.....	1 ounce.

In all photographic work the proper cleaning of the glass is a matter of the greatest importance. Glass as it came from the dealers was first examined for imperfections. scratches. bubbles, etc. The edges were ground until smooth, then placed in a dish containing nitric acid, or in later years, bichromate of potash and sulphuric acid. After soaking several days the plates were washed thoroughly in running water and placed on a rack to dry, after which each glass was cleaned by hand—in fact, polished, like the “buffing” of a Daguerreotype plate, but even with this preparation the film would often become detached and the negative spoiled. To overcome this difficulty a solution of benzole and India rubber was applied to the edges before or after coating, with collodion. This answered fairly well until a dilute solution of albumen in water was tried. This simple preparation prevented any slipping of the film and was a precious boon to both wet and dry plate photographers.

At the conclusion a cordial vote of thanks was passed to Mr. Browne. The report of the Committee on Standards was then taken up and the recommendation as



to "Lens, Mounts, and Fittings," was discussed at length by several members, but no definite result was reached.

**Roanoke Camera Club.**—On June 14th, a number of amateur photographers of Roanoke, Va., met, and organized the Roanoke Camera Club. Following officers were elected: President, Jno. A. Pilcher; Vice-President, N. P. Perkins; Secretary-Treasurer, H. L. Cheatham; Directors, Sam'l Wallis, C. A. Pillsbury, E. L. Flippo, E. M. Grimm. The club has been fortunate in securing suitable rooms, including skylight. Communications to the club should be addressed in care of the Secretary-Treasurer.

**Second Annual Photographic Exhibition, Bridgeport,** to be held under the auspices of the Bridgeport Public Library in the Art Department of the Library from September 21st to October 31, 1895, promises to be a success.

Exhibits are respectfully solicited from local amateur and professional photographers. There is no charge for space, and no entry form is required, and no awards will be made. The local press gives much attention to the Art Department, and will notice all works of merit. Prints may be framed or unframed. All exhibits should be plainly marked with the name of the exhibitor and subject; also a brief account of the same given for insertion in catalogue.

Exhibits will be grouped in five sections. For particulars intending exhibitors should address, W. J. HILLS, *Superintendent*, Bridgeport, Conn.

**Minneapolis Camera Club.**—The slides of the Photographic Society of Philadelphia were exhibited before the Club on the evening of March 13th. On April 27th, the slides of the Baltimore and Providence Camera Clubs were shown.

**California Camera Club.**—The Club has pursued its usual activity during the winter months. On February 26th the slides of the Society of Amateur Photographers of New York were shown. February 28th, the fifty-seventh illustrated lecture was given by A. H. Sanborn, on "Through the Hub to the White Hills."

On March 24th, a party of the members enjoyed an outing to Alviso, near San José, the country seat of Mr. H. B. Hosmer. The annual election occurred in April.

On April 10th the set of slides from the "Photographic Society of North of France," at Douai, France, were exhibited. April 17th a demonstration on Ilo paper was given by Mr. A. B. Post.

*April 24th.* The Albany, Portland, Harvard and Elizabeth Camera Club's slides were exhibited.

*April 26th.* The Fifty-ninth Illustrated Lecture was held in the Metropolitan Temple, entitled "Olla Podrida." The lecturer was Mrs. H. B. Steele.

*April 27th.* A marine outing occurred on the bay upon invitation of Capt. W. G. Leale.

*April 28th.* The Camera Club cyclists went on an outing to Haywards from Fruit Vale.

On May 1st, Mr. A. B. Post gave a demonstration on Glass Surface Ilo Paper. On May 7th, occurred the regular monthly meeting.

*May 26th.* The Camera Club Cyclists went on a trip to Tocaloma and return.

**The Albany Camera Club.** Early in March of this year the Club had an opportunity to improve its quarters by the purchase under foreclosure proceedings

of a commodious three story building, at No. 72 Chapel street, in Albany. From the *Albany Argus* we take the following description :

The house has been entirely repapered and painted, strung with a peculiarly ingenious system of electric lighting, and otherwise been put in the best possible shape. As one enters the hall he sees the glass panels surrounding the door replaced by transparencies produced from some of the club's best negatives, making a very effective decoration. The first floor is given up to "play," the two large, well-lighted rooms being devoted to reading, club meetings, and this is also the sanctum of the club's patron saint, the big electrical optical lantern.

The next floor is a working place, in which are the necessary appliances for making lantern slides, including the reducing camera and a well appointed dark room exclusively for this purpose. The upper floor is occupied by the care-taker. Returning to the lower floor we descend to the basement, a touch on the electric button and it is illuminated; here in the hall we see the lockers for the storage of supplies and chemicals. The arrangement of the lighting here is such that the light may be moved in front of any locker by a touch. The front room is the dark room, in which there is an electric arrangement which supplies the much desired uniform light for development. It is from this room that the strange looking negatives are brought to be changed to the beautiful print or the lantern slide. The rear room has a range, but instead of the steak or pudding, will yield the chemicals which require heating for their solution. It is here that the prints are toned and fixed after being exposed to the sun in the garden.

The members are all more than pleased with their new quarters as well as they may be, for the conveniences afforded will make this a model club and workshop hardly excelled by any club in the country.

The President of the Club, Mr. John S. Paterson, is very active in providing interesting scientific lectures for the benefit of members and friends, and has won an excellent reputation as a presiding officer. We think the Club is fortunate in having such a leader and President.

**Postal Photographic Club.**—Mr. F. E. Fairbanks, Secretary at Fitchburg, Mass., says : The July album was sent out June 14, 1895. It contained eighty-eight prints, contributed by thirty-seven members, and one friendly contributor. It is surpassed in number of prints, by only one album issued by the present Secretary. The next album will be issued Sept. 15th or thereabouts. Try and make it a notable one. He wishes all a prosperous summer, photographically and otherwise.

**The Photographic Society of Japan.**—The annual meeting was held at Tokio on Friday, May 17th, at 4 P.M., Mr. C. D. West, M.A., Vice-President of the Society, in the chair.

There was a good exhibition of photographs by members of the Society, particularly notable being those from the Genrokkwan and from Mr. Otis A. Poole. There was also a technical exhibition, in which the following items were noticeable:

By Mr. T. Asanuma, a "bromide lamp," an adjustable finder making it possible to fix any lens to the camera by the mere turning of a milled ring; Ross' "concentric lenses;" a very neat hand camera by the Rochester Optical Co., and other things. By Mr. R. Konishi, a number of prints of different sizes, some very large, showing the performance of different modern lenses by Messrs. Dallmeyer & Co. and other opticians.

The following gentlemen were unanimously elected members of the Society:

Mr. Edwin Dun, Minister of the United States of America; Mr. Y. Egi, Mr. Walter Elkan and Mr. C. Oyama.

The officers for the past year having resigned, it was duly proposed and seconded that they be all re-elected, and the proposal was carried unanimously.

It was duly proposed and seconded, and carried unanimously, that Mr. Edwin Dun, Minister of the United States of America, and the Hon. P. Le Poer Trench be elected Vice-Presidents of the Society.

The Secretary's report was then read, and showed that the membership had largely increased. Processes had been demonstrated and lantern exhibitions continued to be one of the most attractive features. It was recommended that the Society procure permanent quarters of its own, where lantern exhibitions and meetings could be held and dark room and library facilities provided. The accessions to the Society had greatly increased the income, so that the balance on hand on April 1, 1895, was \$143 more than on the previous year. The Treasurer's report was extremely favorable, and was accepted and adopted with cheers.

The following paper was then read:

#### PIN-HOLE PHOTOGRAPHY.

Y. ISAWA.

Some couple of years ago, one of our members, Mr. J. Favre-Brandt, of Yokohama, read a very interesting paper upon the above mentioned subject. Pin-hole work, as he said in his valuable paper, certainly claims our attention on account of the quality of photographs that can be obtained in a darkened chamber or camera, without special optical apparatus, simply by means of a small hole in a very thin plate. My intention in this paper is to give you a report of my own experiments with the improved pin-hole apparatus, which Mr. J. Favre-Brandt has forwarded to the editor of the *Shashin Sowa*, and which I now show you.

For reference I quote his paper: "Mr. Meheax says the most suitable hole is round, and drilled in a plate of sheet copper or brass of 2-10 millimeters in thickness; it is necessary that the borders show no burr, and are beveled, forming a cone."

"Captain Colson has remarked that, although the depth of focus is unlimited, the greatest sharpness of definition for each size of hole is found at a determinate distance, and he has succeeded in finding the proper focal distance for different diameters of holes; he has thus found:

The best definition of a hole 3-10 m.m. is at 11 centimeters.					
"	"	"	"	4-10	" 30
"	"	"	"	5-10	" 30
"	"	"	"	6-10	" 44

Mr. J. Favre-Brandt has quoted Capt. Colson's table about focal distance, and the former's improved pin-hole apparatus is also made in accordance with the above table, as can be seen from the figures on the apparatus itself. On the left side are marked 3, 4, 5, and 6, which mean respectively 3-10, 4-10, 5-10, and 6-10 millimetres, and the figures on the right show the focal distances in centimeters.

It is a great pleasure to work with so perfect an instrument, as it makes experimental or practical work with the pin-hole easy in the matter of focussing the picture and exposing the plate.

The apparatus consists of two brass plates, of which one is rectangular, the other round; the round plate can be rotated on its axle upon the rectangular one by turning a milled head from the other side of the apparatus. The rectangular plate has four holes at the corners, for fixing the apparatus on the front-board of the camera with the round plate inside. On the back of the apparatus, on the round plate, are to be seen four plano-convex lenses of small diameters, set in holes of a corresponding size, which are for use as focussing lenses or finders; besides this there are pin-holes of 3-10, 4-10, 5-10, 6-10 millimeters diameter, beveled at the edges to form a cone. The plano-convex lenses are 11, 20, 30 and 44 centimeters in focal length, to

correspond to the best definition of the holes. On the front of the apparatus, at the center, is a milled head, by turning which the round plate inside is caused to revolve; on the left are the figures 3, 4, 5 and 6, and on the right 11, 20, 30 and 44; these figures show that, on reading horizontally, if a 3-10 millimeter hole is used to take the picture, it is necessary to extend the bellows of the camera so as to make the distance between ground glass and pin-hole 11 centimeters, to get the best definition. Also on the front are two openings, of which one is used to bring any of the pin-holes into position for exposure or any of the lenses for focussing, by turning the milled head and bringing the round plate into proper position. There is also a register for the pin-holes and focussing lenses.

For instance, if we are going to use the apparatus, we fix it to the front board of the camera, then we set up the camera, and if we wish to take a picture with 4-10 millimeter hole, first we turn the milled head till the opening registers 4; then the plano-convex lens of the focal length, 20 centimeters, is in position, we now focus the view or object, whatever it may be; after this is done we turn the milled head again, until 4 is once more registered, but this time with the pin-hole instead of the focussing lens. Now the pin-hole is at the best distance from the ground glass to give a sharp image, and is ready for exposure by inserting the dark slide in its place.

I have made practical test of Mr. J. Favre-Brandt's improved apparatus, and have found there is nothing wanting as to the exactness of the pin-hole diameters, and the focal lengths of the focussing lenses, which are the two most essential parts of the apparatus. The working parts also act without hitch. I have revised the focal length by Captain Colson's formula, and found the figuring on the apparatus to be quite correct, except that the decimal part is cut off to make round numbers. These decimal parts are of course not necessary in pin-hole work.

On the first introduction of this improved apparatus, Professor W. K. Burton made some experiments with it and got good results. Now my temptation to experiment in this kind of work was that there are other formulæ besides that of Captain Colson's, and too many formulæ for one and the same thing are confusing to unmathematical minds. Though I do not intend to run down any formula, I cannot help deprecating this confusion, especially as the results are such that I can hardly tell that one formula is superior to another.

The method of experimenting was as follows: First by one formula I found out the focal length or rather distance of best definition for holes of 3-10, 4-10, 5-10, 6-10 millimeters diameter; from these focuses I deduced the angular value of apertures, and then from this the U. S. numbers for ascertaining the exposure. Doing this, I took first Captain Colson's formula as Mr. Favre-Brandt did, in which the focal length corresponds with the figures on his improved apparatus, and then I took that of Mr. T. R. Dallmeyer. According to this preliminary calculation, I made my actual experiments.

1st. Captain Colson's formula for determining the distances between the hole and the sensitive plate to get the best definition is  $f = d^2 \times .00081$ ; of which  $f$  equals the focus and  $d$  the diameter of the hole. By applying this equation I got the following table:

Diameters of holes. m.m.	The distances of best definition. c.m.	Angular value of the apertures.	U. S. number of the apertures.	Exposure supposing 1 second with U.S. 32 stop.
3-10	11.11	$f=970$	8555	4' 27"
4-10	19.72	$f=498$	15900	8' 0"
5-10	30.86	$f=317$	23799	12' 24"
6-10	44.44	$f=241$	34817	17' 55"

2nd. The formula given by Mr. T. R. Dallmeyer is

$$f = r^2 / \lambda$$

in which  $\lambda$  is the wave length of light chiefly used in photography, and which is generally taken as  $G = .000017$  in.

$$f=r^2-f-r^2-.000432 \text{ m.m.} -d^2-.001728 \text{ m.m.}$$

By this formula, proceeding with the calculation, I got the corresponding table as following:

Diameters of holes. m.m.	The dis- tances of best def- inition. c.m.	Angular value of the apertures.	U. S. num- ber of the apertures.	Exposure supposing 1 second with U.S. 32 stop.
3-10	5.31	$f-174$	1892	1' 1"
4-10	9.36	$f-223$	3246	1' 45"
5-10	14.47	$f-280$	5280	3' 45"
6-10	20.35	$f-336$	7056	3' 45"

As seen from the above table, the two formulæ differ widely from each other. Mr. A. C. Pouton, of Bournemouth, expresses the opinion that all formulæ for pin-hole photography are valueless, and that all large apertures give softness and all small ones sharpness; he also expresses the curious opinion that eight times more photographic energy passes through a pin-hole than through a lens having a stop of the same diameter.

According to Captain Colson, 11 centimeters is the distance for best definition with a hole of 3-10 millimeters in diameter, and according to Mr. Dallmeyer 5 centimeters is the distance for best definition with a hole of same diameter, while according to Mr. A. C. Pouton these and all other formulæ are nonsense, so that confusion is only worse confounded.

I have made experiments with both the formulæ above quoted, in each case making exposure with holes 3-10 and 5-10 millimeters diameter, whilst one exposure has been made with an ordinary rectilinear lens with U. S. 32 stop. [Prints were sent round showing results with pin-holes after Capt. Colson's formulæ with 3-10 and 5-10 holes respectively; and after that of Mr. T. R. Dallmeyer's with the same holes respectively. Also the results with a rectilinear lens with U. S. 32 stop.] When I made my experiments the light was most favorable, that is, it was somewhat diffused and bright, the time was ten o'clock A.M., and the plates were Marion's ordinary actinometer No. 40. With the lens I gave an exposure of one second with 32 stop; with the pin-holes I gave exposures respectively of 4'27", 12'24", 1'1" and 2'45" respectively. For development I took pyro-soda developer, and developed in the same bath, and in all cases the image appeared and was finished at the same time. This proves that in all cases the proportions of the exposure were quite the same; and it proves also that the energy of light passing through a pin-hole is not much different from that through a lens, in spite of what is stated by Mr. A. C. Pouton. Indeed, if there is any difference in energy, it is so slight that we cannot notice it.

As to the definition, which is the most essential part of the experiment, the results by Captain Colson's and Mr. Dallmeyer's equations are barely distinguishable. If there is any difference the results by Mr. Dallmeyer's equation are sharper than those by Captain Colson's, but we must remember that in the former case the exposures were a great deal shorter than in the latter, so that there was less chance of vibration of the camera. I do not hesitate to say that the definition in both cases is practically the same, and that there is a great range of pin-hole diameter with the same focal length, or of focal length with the same diameter, giving practically the same definition. Still there is some limit for good definition.

Before concluding my paper I quote another interesting pin-hole table by the Rev. F. C. Lambert, M. A., as follows:

TABLE OF COMPARATIVE PIN-HOLE EXPOSURES.

If with a given plate, light, subject, etc., and a lens working at  $f/16$  the correct exposure be one second, then under the same circumstances the following table gives the corresponding exposure in minutes:

Distance of hole from place in inches.	Diameter in inches.		1-25
	1-50 min. *6	1-44 1-35	
6	41-2 min. *8	5 min. 8	
8	10		
10	16		
12	24	18	min. 6
14	32	24	8
16	40	32	10
18		41	12
20			16
			*24

On examining this table, I found that the marks for best definition corresponded to Mr. Dallmeyer's formula. Also I observe the 1-50 of inch in the table nearly corresponds with the 5-10 millimetre of the two preceding tables; of which 6 inches distance of hole from place, and 6 minutes' exposure practically exactly corresponds with my experiment No. IV.: of which 12 inches distance of hole from plate and 24 minutes' exposure corresponds with that of No. III. Looking at the table in the first column we find the range of focus for 1-50 inch hole, from 6 inches to 16 inches, which lies between Captain Colson's focal length to Mr. T. R. Dallmeyer's focal length.

I shall say, in concluding my paper, that I do hesitate to state that the best definition of image in pin-hole photography can be got within the range of Captain Colson's formula and that of Mr. T. R. Dallmeyer, and that if the worker takes advantage of Mr. J. Favre-Brandt's improved apparatus, and adopts the figures on the apparatus as the *longes* limits of focus, he may reduce the distances to those of Mr. T. R. Dallmeyer's, according to the nature of the subject to be included.

I conclude by quoting Mr. Favre-Brandt's paper as follows:

"To sum up the advantages of using the pin-hole:

- (1) More artistic definition than a lens.
- (2) Unlimited depth of focus.
- (3) Perfect perspective for lines in architecture.
- (4) Mathematical exactness in the scale of plans.
- (5) The angle of view can include as much as 170 degrees.

Mr. W. K. Burton had had the privilege of reading Mr. Isawa's paper some time before the meeting, and had made a number of exposures with different distances, and different pin-hole apertures, using as subject a landscape in some cases, in others a point of light or "artificial star," in the form of the reflection of the sun from a silvered glass ball placed at a considerable distance from the camera. His conclusion was that the best results were got by holes cut in accordance with Mr. Dallmeyer's equation. Holes either larger or smaller gave worse definition.

Some of the results of exposures on the "artificial star" showed remarkable phenomena produced by diffraction and interference of light.

Mr. Favre-Brandt had sent a neat leather case containing a set of single uncorrected lenses, of various focal lengths. There were also photographs taken by the lenses, which showed that, making allowance for want of achromatization, excellent results could be got with apertures as large as  $f/10$ , and accompanied the exhibit with a translation from the French of a circular setting forth the uses of these sort of lenses.

The proceedings ended with a vote of thanks to the Chairman.

After the meeting there was a dinner in Japanese style, which was enjoyed by the large number of members who attended, and was enlivened by the performance of the orchestra of Mr. Kajima Seibei, Japanese and foreign music being played.

\* Indicates range of distance of hole from plate for best definition, *e. g.*, 1-35 gives best definition from 20 to 24 inches away from the hole.

## EQUATIONS OF THE CONJUGATE FOCI; THEIR DERIVATIVES AND THEIR USES.\*

BY WILLIAM M. MURRAY.

(Continued from page 289.)

TO FIND STOP FOR ANY REQUIRED DEPTH OF FOCUS.

Returning to Equation (3)  $d = \frac{af' (F' - F)}{F \cdot F'}$  and making  $a = \frac{\phi}{n}$  as before and substituting the value of  $f'$  from Branfill's Equation,  $f' = \frac{\phi F'}{F' - \phi}$  we have

$$d = \frac{\phi^2 (F' - F)}{n F (F' - \phi)} \quad \text{and} \quad n = \frac{\phi^2 (F' - F)}{d F (F' - \phi)}$$

We now have a value for  $n$  (or the ratio of focus to diameter of diaphragm) to give any required diameter of circle of confusion ( $d$ ) to images of objects at various distances apart ( $F' - F$ ).

Thus we may ascertain what stop to use to have objects, situated respectively 25 feet and 60 feet from a lens 6" focus, both sharp or apparently sharp at the same time. Making  $d = \frac{1}{100}$ " as before, we have,

$$n = \frac{100 \phi^2 (F' - F)}{F (F' - \phi)} = \frac{100 (6)^2 (720 - 300)}{300 (720 - 6)} \quad n = 7 +$$

When, therefore, we have focussed on an object sharply at 60 feet distance from a 6" lens, we may, by the use of a stop one-seventh of the focal length or say  $\phi/8$  of the Uniform System series, bring an object 25 feet distant into approximate focus.

### RECAPITULATION.

We may thus from the simple equation of the relations of the conjugate foci, determine the principal focus of a lens; the distance of the object; the position of the ground-glass; the size of the object and its image; the speed of a shutter to do certain work; focus our hand cameras; and discuss the subject of rapidity, definition and depth of focus. While we believe that the easiest way to use these equations is to study the subject from the beginning, it is only necessary to take the formulæ as we find them ready made in the tables, to hold the key which will unlock many of the problems daily met with in the practice of photography. For instance, the simplest of Branfill's Equations—

$$\phi = \frac{r (F + f)}{(r + 1)^2}, \quad F = \phi (r + 1), \quad f = \frac{\phi (r + 1)}{r}, \quad r = \frac{F - \phi}{\phi},$$

and the useful expression for depth of focus—

$$D = \frac{8.3 \phi^2}{n}, \text{ giving answer in feet, will be found most serviceable. The fre-}$$

quent substitution of known quantities in these to determine the unknown will fix them in memory and they will prove trusty friends. Above all, let the first use of a new lens be the occasion of ascertaining its focus, employing, if need be,

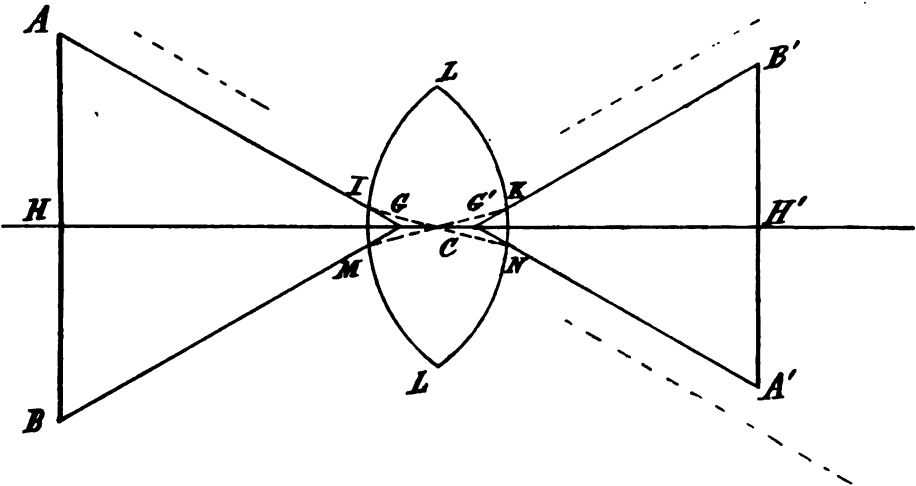
Branfill's first expression,  $\phi = \frac{r (F + f)}{(r + 1)^2}.$

It may be urged that this equation, representing the focus of a lens without thickness, is liable to cause error. It supposes that the surfaces of the lens and its optical center coincide. But this is not strictly true, and rays of light which from their direction would pass through the optical center (transversals) are converged on entering and before leaving the lens on two other nodal points on the axis between the physical center and the surfaces. These points are called the centers of admission and emission, and also Gauss points, because Gauss explained the subject at a meeting of scientists at Gottingen in 1840. As we ought to estimate  $p$  and  $f$  from the posterior Gauss point—center of emission—and  $F$  from the object to the anterior Gauss point—centre of admission—it will be seen that any system that estimates the focus by dividing  $F + f$  (the distance from the object to the ground-glass), when object and image are the same size, by 4 —

$$r = 1, \quad p = \frac{r(F+f)}{(r+1)^2} = \frac{F+f}{4}$$

—will introduce, in the case of a very large lens, some proportion of error. It has been claimed that at the United States Coast Survey Bureau at Washington (in 1866), in attempting to focus by calculation to copy maps to one-eighth scale—no greater error being permissible than .0039 inch—using a large globe lens of nearly 20 inches

*Figure V*



focus, an error of  $\frac{1}{8}$  inch was made in the estimation of the principal focus and 2.91 inches in the distance from the object to the image from this cause. It was found, therefore, absolutely necessary to determine the focal centers of admission and emission. How, then, shall we establish these centers from which to measure our foci? The following method has been recommended. Focus accurately on a very distant object and mark the position of the ground-glass on the bed of the camera. Then focus sharply on a near object so that the image is of the same size,



$$f = \frac{2(r+1)}{r}, r = 1, \text{ therefore } f = 2\phi.$$

Having marked the second position of the ground-glass, the difference between the two marks will be the focus of the lens. Now measure twice this focus ( $2\phi$ ) from the ground-glass toward the lens and mark the place on the lens tube. It will be the center of emission or posterior Gauss point, and in a rapid symmetrical will be found between the diaphragm or physical center of the combination and back lens. Thereafter,  $f$  should be measured from that point. The anterior Gauss point may be ascertained by measuring back from the object to the lens a similar distance and making a mark on the lens tube, and will be, in a symmetrical combination, between the physical center and the front lens. With this method of ascertaining and measuring the foci, the Coast Survey copying, mentioned above, was done by calculation with perfect accuracy, and the ground-glass trial focusing was entirely dispensed with, to the great saving of the eye-sight of the operators in the Bureau.

That this subject may be more clearly understood I have drawn a diagram, Figure V, the proportions being exaggerated to show the principle. A transversal is a ray of light proceeding from a point on an object and passing through the optical center of the lens. By a fundamental optical law it emerges from the lens after refraction in a path parallel to its original direction. In Figure V the transversal  $AI$  proceeds from the extremity  $A$  of the object  $AB$ , is refracted through the optical center  $C$  of the lens in the line  $ICN$ , emerges from the lens in the line  $NA'$  parallel to its incident direction and finds its focus in the point  $A'$  of the image. The prolongations of the incident ray to  $G$ , and of the emergent ray to  $G'$ , on the axis, mark respectively the anterior and posterior Gauss points from which the greater and lesser conjugate and the principal foci should be estimated. For it is evident that all the other points of the object  $AB$  send forth similar rays whose directions converge in a cone whose apex is at  $G$ , and, after being refracted through the optical center, diverge to form the image  $B'A'$  in a cone whose apex is at  $G'$ .

### A BEGINNER'S IDEAS.

To the Editor of AMATEUR PHOTOGRAPHER.

Dear Sir: I am an amateur in the true sense of the word, only having one year's experience at picture making. I realize that I am incompetent to criticise the pictures which appear in the paper from month to month. Hence, I would ask that my references be looked upon as inquiries and not criticisms.

A great many of the pictures have very little merit apart from the story they tell. That is, if they are accurately reproduced. For instance, a group with part of them out of focus and all dark faces *seems to me* to be a very poor photographic production. But, on the other hand, they tell a story of mirth and frolic, or perhaps a pathetic episode. Now, if the story told constitutes the picture it is all right, but *to my mind* it would be greatly improved if the detail and definition were brought out clearer.

"Homeward," by Karl Greger, is most certainly a work of art, but the fact that the sheep are entering a mist at so short a distance from the camerist, and that objects beyond the mist appear quite clear seems to detract from its photographic merit.

Now, I candidly admit that these impressions may be the result of my ignorance of art and photography, but be that as it may, I am trying hard to learn to appreciate the many natural pictures which constantly confront us as we travel on through life. Some one will probably take up this subject and advance some ideas which will be helpful to beginners such as I.

There is another question which I would like to ask, *i. e.*, Do you think it right in competitions, for say  $4 \times 5$  pictures taken with a  $4 \times 5$  lens to compete with the same size picture taken with an  $8 \times 10$  lens? It seems to me that in the above case the  $4 \times 5$  lens is heavily handicapped.

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[NOTE BY THE EDITOR: We would like the opinions of some of our readers upon the above subjects. Ours are too well-known to repeat.]

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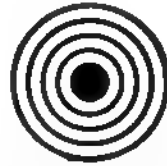
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# THE AMERICAN AMATEUR PHOTOGRAPHER.

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## Plagiarism in Photography.

BY VERTA LACROSSE.

For such kind of borrowing as this, if it be not bettered by the borrower, among good authors, is accounted Plagiaré.—MILTON.

IN my dictionary I find the term plagiarist defined as one who purloins the writings of others and puts them off as his own. The term has quite recently been applied by an English contemporary to a certain photographer who produced a picture which in some way resembles a photograph previously made and exhibited by another well-known amateur. In the instance referred to I happen to know that each photographer worked independently of the other, and therefore the charge of plagiarism is not justifiable.

The question whether a photographer can be guilty of plagiarism, and if so, to what extent? is an interesting one, and worth considering.

### "OUTDOOR STUDY."

We do not, of course, refer to a direct photographic copy of another man's work—this would be theft pure and simple—but to the borrowing of the ideas expressed in a picture by others, in the same way that the literary plagiarist makes use of the ideas, expressions and style of another writer.

Until within the last few years, it may be said that the camera made all the photographs. The photographer never thought of doing much else than the selection of the spot to place the instrument and the mechanical operations necessary to produce the finished photograph. But now it has been clearly proven that there can exist such a thing as "individuality" in a photographic picture. The works of our best men

prove this. Those who have studied the recent exhibitions and the pictures of the best artist photographers, have often but little difficulty in detecting the hand of the photographer in a picture, without reference to the name. Men like Stieglitz, Craig Annan, Davison, Emerson, and several others, have struck out from conventional methods and adopted a style of their own, so that their work is almost as easy to detect by the educated as the work of Milet or any other renowned painter.

Photography has its limits, however, and these are much narrower than the limitations of the artist or the literateur, hence the photographer, having a smaller field for his operations, runs a greater risk of making a picture similar to one that has already been made and thus rendering himself liable to the charge of plagiarism which is readily made by those narrow-minded individuals, of whom there are unfortunately quite a number, who, jealous of the success of others whose work they can never hope to equal, vent their spite in bitter writings and in false accusations.

The amateur photographer who is desirous of making pictures with his camera instead of mere topographical charts, finds his best lessons are learned from a careful study of the works of those more advanced in the art, and it is not unnatural that he should afterwards consciously or unconsciously imitate the style of those workers whose pictures have most deeply impressed him.

The rules for composition as laid down by artists are few in number

## "GLACIER VIEWS." NO. 2.

BY LUDWIG SCHMIDT.

and are learned by every art student. He who follows them too closely is certainly liable to imitate the works of others, or to be charged with want of originality.

As an example of how easily it is for the artist photographer to lay himself open to the charge of plagiarism, let us take two men imbued with a certain amount of artistic feeling. Take one to a spot where a picture can be made with the camera, and when he has finished his work, take the other and leave him there with his camera. While the pictures made by both men may not be identical, yet there will undoubtedly be a great resemblance. Both will find out where the best or most artistic picture is to be made, and the arrangement and treatment of the subject will not be dissimilar.

I do not wish to imply that this would always be the case. There are, I admit, a few photographers who have not only broken away from all bonds of conventionality, but have adopted certain methods to produce esoteric results, and with such the pictures produced would probably be unlike those of any other maker. The old adage, "Beauty is in the eye of the beholder," is pregnant with meaning. We only see the impressions of objects. It is the mental attitude of the photographer that enables him not only to decide the effect of such impressions, but to reproduce them by photographic means.



The photographer striving to be original in his work often finds it a difficult task, and if he be a sensitive man, will sometimes refrain from exhibiting a picture which bears any resemblance to one already known.

I have in view a case of the kind. A friend of mine—a well-known amateur—made some time ago an excellent photograph, which for some

By Ludwig Schaller.

"GLACIER VIEWS." NO. 3.

reason or another was never exhibited, and shown only to a few. Another picture embodying a similar idea, but to my mind inferior, has recently been very successful at exhibitions, many medals have been awarded, and the highest praise bestowed upon it. For this reason my friend has locked up his own work and refused to exhibit it, owing to the likelihood of his being charged with plagiarism, notwithstanding the fact that his picture was produced many months before the other. It is difficult, however, to prove priority in a case of this sort.

This is a state of things that should not exist. Every photographer should be free to make any kind of picture he chooses, without having to take into consideration any picture previously made and known. With painters we rarely, if ever, hear a charge of plagiarism. If we visit the old galleries we will find for instance a few hundred pictures of the Madonna and Child by the old masters. Many of these bear a very

strong resemblance to each other, but I believe no one has yet been rash enough to accuse these old masters of plagiarism.

When we consider the number of photographers, both amateur and professional, who inhabit the earth, and are constantly exposing plates in their endeavor to make pictures, and if we should take into consideration the limitations of photography, it should not seem wonderful that pictures bearing a strong resemblance to each other are often made by two or more individuals. It is merely a coincidence, and coincidences are common enough in every day life. Or it may be due to some kind of mental telegraphy, but the possibility I feel unable to discuss.

In order to minimize the possibility of these coincidences, the amateur must endeavor to strike out into original paths—to be independent of others. At the same time he must avoid eccentricity and extremes. In making his picture he must not allow the camera and the chemicals to do all the work. It should be built up by the photographer himself. In an

By C. R. Pancoast.

\* THE FIND.

article by Max Holzberg, published in a recent issue of this magazine, that gentleman detailed some excellent methods of producing artistic results by mechanical means, and while I do not advocate the following of his instructions explicitly, yet they offer suggestions which should be useful to the photographer in his attempts at picture making.

The true principle of picture making by means of the camera is to have some end in view, and work with the determination to produce the result desired. In this manner we infuse our own personality into the work, and should it happen that another photographer selects the same spot for the taking of his picture, there will be a vast difference between his results and your own. And even if we find others copying our ideas, is not imitation the sincerest form of flattery?

In conclusion, I would wish to warn those self-appointed critics that that they should not make charges of plagiarism unless they are clearly justified in doing so. Many an earnest worker may be thoroughly disheartened and made to give up photography by false accusations of this kind, and earnest workers we cannot afford to lose. There are too few, in this country especially. My advice to the photographer is—go ahead—take no heed of these barking curs. They are harmless, and don't imagine that because a man is editor of an amateur photographic magazine that he is a competent critic. Very few of them are.

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### Artistic Posing in Photography.

BY JOHN TARBELL.

IN the following article I shall endeavor to give an idea of some of my own methods in posing groups and single figures for photographing. It is not my intention to lay down any wrought iron rules for other amateurs to follow.

Perhaps I cannot better illustrate my meaning than by inviting the reader to glance with me at some of the places of interest I have visited, and to share in my efforts to produce a pleasing picture—one that shall be good in composition and in artistic qualities.

Should I desire to photograph a group of children and put to them the hackneyed question, "Do you want your picture taken?" in nine cases out of ten the result will be

they will range themselves in a row, facing the camera in attitudes stiff and unnatural. This difficulty can be overcome only by infinite patience,

tact, and a certain amount of moral courage. In numerous cases I must confess to having found the obstacles insurmountable, and to having retired ingloriously. The difficulty of persuading people not to dress up for the occasion, but to appear in costumes indigenous to their surroundings is very great.

When in New Hampshire some years ago, I met an old farmer with a characteristic face and strikingly picturesque costume, but my stock of plates being exhausted I asked him to allow me to photograph him next day and he consented. Making my appearance at the appointed hour, he informed me he would be ready "right away." He disappeared, and after some minutes a dim suspicion of the truth dawned on me. In ten minutes he reappeared, no longer picturesque, but dressed in his Sunday garb, a colossal monument of angularity and stiffness. All entreaties to wear his everyday clothing failed, and I retired defeated and discomfited.

Of late years it has been my custom to occasionally employ friends of mine, who were willing to accompany me on some of my shorter trips, as models, thus being relieved of the embarrassment of asking entire strangers to pose, besides being a surer method, as it is not always possible to find figures at the right moment to suit the surroundings.

The following illustration is an example of one of the results obtained by means of a model :

"MAY BLOSSOMS."

The little girl in the foreground had often posed for me on former occasions, and in this instance accompanied me early in May to the country. We took a few simple costumes with us, which were utilized upon arriving on the spot indicated in the picture. The apron and kerchief were soon donned, the sleeves of the dress rolled up, and a small basket of flowers, previously gathered, held in the hands. With a few words of encouragement and caution, the exposure was made, and the result entitled "May Blossoms."

It seems to me absolutely necessary in the posing of large groups to have become familiar with the rules of composition, and though not always conscious of employing them, I probably do so intuitively. With me it seems to be more a matter of *feeling*. Only when the grouping looks right to me on the ground glass am I ready to make the exposure. What may often appear to be an unconscious pose is the result of careful arranging and re-arranging. I have found it impossible, as a rule, to

receive suggestions when endeavoring to compose a group, even from one of artistic perceptions, except on rare occasions, the advice proving more of a hindrance than a help.

In the small fishing town of Whitby, England, the photographer has a wide and varied field for quaint bits of scenery, and there one of my most successful pictures was taken. While rambling around the ancient town, I stumbled upon an old court or side street, which interested me at once, and which I determined to photograph with some of

INHABITANTS OF OLD STREET WHITBY ENGLAND.

its motley inhabitants. Here, as elsewhere, the great difficulty lay in eliminating the larger portion of those who were anxious to be "taken." I succeeded, however, in narrowing down the number to those seen in the picture, which is called "Inhabitants of an Old Street, Whitby, England."

I have been told that the figures in the illustration look "so natural," and as if they did not appear to be posing. Be that as it may, the result was obtained only after repeated changes, requiring great patience on the part of the writer.

"THE SONG OF THE SHIRT."

I often found that such pictures, *to be popular*, must allow of no gradations of light and shade on the faces. Middle aged and old people are dissatisfied if any wrinkles appear, compelling the amateur to take the negative to the retoucher (stultifying his ideas of the eternal fitness of things) to have such indications removed.

Let me here endeavor to explain one of my attempts to portray an indoor scene, the idea of which was suggested by Hood's poem, "The Song of the Shirt." A portion of a room with a small skylight was utilized, and by a little judicious management, was made to represent an old garret. Part of the wall was covered with dark paper painted to represent broken plastering. The floor was changed by means of brown paper, and painted in imitation of rough boards. The model chosen was very

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See particulars for our Competitions on pages 360 and 381.

intelligent and possessed of strong dramatic instincts. By dint of skillful making up, she was transformed into a haggard, hopeless looking seamstress. The scene is intended to represent, where, exhausted, she falls asleep over her sewing, so well described by the author.

" Work, work, work  
Till the brain begins to swim.  
Work, work, work  
Till the eyes are heavy and dim!  
Seam and gusset and band,  
Band and gusset and seam,  
Till over the buttons I fall asleep  
And sew them on in a dream!"

I was very much aided in this instance by valuable suggestions from the model, who possessed a fine artistic temperament and was very patient—two important aids to the photographer. I mention this to show that it is possible to be assisted by the suggestions of an intelligent subject, though the occasions are unusual, at least such has been my experience.

Digressing somewhat from the original subject, the photographing of animals is often a very interesting branch of the art, and the results obtained have usually the merit, to say the least, of representing them in unconscious attitudes.

An amusing adventure when in Whitby, England, was an attempt to photograph one of the diminutive donkeys, which are largely used there for carrying milk and vegetables to market. Seeing one of these with picturesque trappings in one of the old streets, I bargained with his

driver to pose with the little animal. The donkey, however, must have been possessed with a prejudice against the citizens of our Republic, for, notwithstanding my utmost endeavors in the arrangement and exposure, the result showed only a blurred image. Doubtless that little loyal British subject took a wicked pleasure in thwarting what he may have considered "my American impudence." Some of the barnyard fowl make very good subjects, particularly ducks and geese. The illustration here was ob-

'A CONSULTATION OF QUACKS.'

tained in Cornwall, N. Y., and was secured after considerable scheming.

Two previous experiments had been made to see if the ducks appeared to good advantage on the ground glass, and that they might become somewhat familiar with their environments. All the conditions proving favorable after the second trial, the moment chosen for exposure was when they placed their heads together in solemn conclave and quacked their protestations at being confined in the hot sunlight. These conditions seemed to suggest the title: "A Consultation of Quacks."

"A QUEBEC WINDOW SCENE."

Returning to human figures, let us visit Quebec, Canada. There I found much to interest me in the way of character studies, and I improved my opportunities at various times. The foreign look of many of the old houses, combined with the fact that the majority of the inhabitants speak French, suggest a city of the Old World rather than the new.

I encountered great difficulty at times from my imperfect knowledge of the French language, as I found that what I had learned in the old school house touching the "Baker's Sister's Satin Shoe" was of no use. To my surprise, the few words I had retained were understood without difficulty, but in my efforts to comprehend them I failed miserably, the sentences appearing to run together and jostle each other in a manner suggestive of a go-as-you-please match. The old French windows of the town had a peculiar fascination for me, and in one of my rambles I spied a charming little maiden of about seven summers seated in one of them, conversing with a little boy. The pose of the two children, especially of the girl, was so graceful that I made up my mind to capture it. Smilingly, I said: "Voulez vous poser, mes enfants?" Hesitating some-



what, they timidly replied : "Oui, monsieur." Adjusting my camera, I made some trifling changes, and when ready, said : "Maintenant, soyez bein tranquille," and removed the cap from the lens. "C'est tout," said I, returning it. The children remained rooted to the spot, and it was some minutes before I could make them understand they were no longer needed.

I hope I may have at least in a measure succeeded in conveying an idea of some of my own methods and partial successes in the broad field of photographic art, and that these hints may prove of service to the large army of ambitious amateurs.

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### English Notes.

BY GEORGE DAVISON.

#### ESTING Plates for Color Sensitiveness—

Captain Abney has recently described at the Royal Photographic Society a very useful and simple plan which will show when a plate is practically equally sensitive to all colors when used with certain screens, and will also indicate what kind of screen is most suitable for any particular kind of plate. Put briefly, the method consists in the use of five small squares of colored glasses—white, green,

blue, yellow and red. The luminosities, or brightness of the light transmitted by each of these colors *are made equal* by the use of rotating discs before each color, or, more simply, by merely adding a small square (cut out of a plate exposed behind a sensitometer) of the required opacity. The difficulty of the varying *brightness* of the colors being thus got rid of, it is evident that the color effects alone will remain, and thus the influence of different screens can now be very readily compared. If the opacities of the portions of the plate beneath the different glasses now appear equal, then the plate is equally sensitive to all colors. For example, Capt. Abney showed that with a Lumière plate sensitive to yellow and red the resulting opacities were equal throughout when he used a yellow screen in conjunction with an aqueous solution of naphthol green. Instead of the naphthol green solution, a light chromium green glass in combination with the orange screen gave practically the same result.

**Changes in Platinum Prints.**—Every practical worker of the platinotype process knows that after insufficient treatment of the developed prints with acid clearing or fixing, the whites of the print are liable to become slightly brown. To some people in certain subjects this is rather pleasing than otherwise, but at the moment we are not concerned with that aspect of the question, but rather with the permanency or the liability to change, and the means of altering the color of platinum prints.

A paper has recently been read at the Royal Photographic Society by Mr. Chapman Jones, the Honorary Secretary, giving the results of some experiments upon a platinum print which had browned, not only in the whites of the paper, but also in the image itself. Mr. Jones is of the opinion that the change was due to the iron contained in the paper being acted upon by sulphur compounds, probably sulphuretted hydrogen, evolved from the common mounting board upon which the print had been mounted. He states that it is practically impossible to get rid of the iron absolutely from platinum prints. A mixture of hydrochloric acid and chlorine water restored the print to its original pure black image in a few minutes, but the acid alone had little effect. The trace of iron is not removed by the acid and chlorine treatment, and the browning by sulphuretted hydrogen may be made to reappear both in the image portions and in the lighter parts of the paper.

As regards the very useful method of changing black platinum prints to a warmer black or brown by means of a solution of catechu, Mr. Jones is of opinion that in this we have nothing more than the catechu reacting with the iron present in the print and producing the characteristic color of the compound of these two substances.

The experiments point to the necessity for the careful removal of all the iron possible whenever it is desired that platinum prints shall retain their black color and the purity of their whites, and of course to the advisability of leaving more iron in the paper, when for any pictorial purpose the color is desired. Further, the best method of revival of any prints which have changed color is indicated. For ourselves, we have often specially given platinum prints only very slight treatment in the acid on purpose to retain a warmer color and subdued effect, but during eight or ten years we have never had a single case of any noticeable change in a black print, either in the whites or the image when treated normally.

**Substitutes for Ground Glass.**—Professor W. K. Burton gives a formula for making a focussing screen surface of a finer grain than afforded by any ground glass, and capable of showing very fine, clearly visible lines, scratched upon the surface with a steel stylus.

The formula, as follows, is based upon and worked out by experiment

from a suggestion by Mr. Carey Lea, and the substance consists of a gelatinous emulsion of sulphate of barium.

A.		
Chloride of barium.....	200 grains.	
Hard gelatine.....	200 grains.	
Water, up to.....	5 ounces.	
B.		
Sulphate of sodium.....	140 grains.	
Water, up to.....	5 ounces.	

When the gelatine has become softened, the two solutions are heated to 120° Fahrenheit, and are mixed into a creamy emulsion with much stirring. Half an ounce of methylated spirits is added to facilitate coating.

The plate is levelled and the emulsion spread, and when the gelatine has set it is washed very carefully, to make the plate dry without tackiness.

On drying, the film becomes very translucent. Other methods are given by Mr. Burton, such as bromide of silver, produced by emulsifying nitrate of silver with bromide of potassium, the latter salt slightly in excess, and also an emulsion of carbonate of lead in gelatine, but the sulphate of barium plates proved the best.

**Toning Baths For Gelatine Printing Papers.**—A writer in the *British Journal of Photography* of the 28th of June gives the results of some trials made with the view of producing a toning bath for gelatine papers which may be used over and over again successfully. It is well-known that the most widely popular toning bath for albumen papers, namely, the acetate bath, is very little used for gelatine papers, and that more difficulty is experienced in arriving at a suitable, even-acting toner which will work continuously for gelatine chloride papers than was the case with the albumen papers. The writer goes into particulars to show that the phosphate of soda bath (say twenty grains phosphate of soda and one grain chloride gold in from eight to ten ounces of water), which ordinarily is considered a non-keeping bath, may be used continuously, provided all the toning solutions be made up with distilled water, and provided the prints previous to toning be washed in soft, pure water. He recommends that soft water be used in all operations with prints, and finds that under these circumstances both the phosphate bath as well as the acetate of soda bath may be used continuously, and revived with gold for the gelatine papers as for albumen prints.

**Gas Cylinder Explosions.**—It is stated that as a direct outcome of the recent fatal case of explosion at a London railway station, a departmental committee has been appointed by the Home Secretary to take

evidence, visit all the various factories, and generally inquire into the whole subject relating to the gas-compressing industry.

**Japanese Lacquer.**—Mr. T. C. Hepworth, in the *Photographic News*, states, now that the importation of Japanese lacquer is an accomplished fact, it may be expected to supplant the more costly process of French polishing as applied to cameras. Japanese lacquer will withstand almost any heat, and that being so, it should prove valuable for the outside and inside of optical lanterns. The glaze is very perfect, sets with great hardness, and will stand contact with mineral acids, with caustic soda, ammonia, ether and alcohol.

**Imperial Institute Exhibition of Photography.**—This exhibition is continuing through the summer. Although it has not come up to the original intentions of the organizers, it is by far the biggest thing of the kind ever yet arranged. Processes are shown in actual operation, and demonstrations given periodically of half-tone work, Woodbury type, Collotype, ceramic work, and the like.

The historical and scientific sections are valuable educational divisions, and the artistic side of photography is well shown in a select exhibit. The British colonies also are well represented by large and striking photographs. In the scientific section perhaps the photo-micrographical part is the most complete.

*London, July 10, 1895.*

# “ AMERICAN AMATEUR PHOTOGRAPHER ” BEGINNERS' COMPETITION.

For the best photographs made by beginners, we offer the following prizes:

*First Prize:* Fifteen dollars' worth of photographic stock.

*Second Prize:* Ten “ “ “ “ “

*Third Prize:* Five “ “ “ “ “

One year's free subscription to the AMERICAN AMATEUR PHOTOGRAPHER will be awarded to each of the next seven competitors in the order of merit.

## Rules.

*Rule 1.* All entries must be forwarded to Alfred Stieglitz, 162 Leonard street, New York, and marked “ Beginners' Competition.”

*Rule 2.* The name of photographer, with title of picture, to be legibly written on back of each mounted photograph.

*Rule 3.* The competition is only open to those who started practicing photography since July 1, 1893.

*Rule 4.* All pictures must be sent prepaid.

*Rule 5.* The whole of the work must be that of the competitor, and must be mounted.

## Notes.

The editors reserve the right of publishing reproductions of any of the photographs submitted.

No competitor shall receive more than one prize.

Pictures will not be returned.

All pictures entered for competition must be received by October 15, 1895.

Judge: Alfred Stieglitz.

### THIRD ANNUAL "AMERICAN AMATEUR PHOTOGRAPHER" LANTERN SLIDE COMPETITION.

For the best set of six lantern slides we offer one silver and one bronze medal in each of the following classes:

I. Landscapes.

II. Marine pictures.

III. Genre studies.

IV. Architecture.

#### Rules

RULE 1.—Entries may be made in any or all of the different classes, and must consist of six slides for each set entered, sent prepaid.

RULE 2.—Both the original negatives and the slides must be the entire work of the competitor.

RULE 3.—No competitor will receive more than one prize in any single class.

RULE 4.—The size of the slides should be  $3\frac{1}{4} \times 4$ , or  $3\frac{1}{4} \times 3\frac{1}{4}$ . When viewing the picture in its natural position the label containing the title must be to the right, and the thumb label on the lower left hand corner.

RULE 5.—Sets receiving the awards will become the property of the AMERICAN AMATEUR PHOTOGRAPHER, and will be loaned to the principal photographic societies. The remainder will be returned at the expense of the competitors, *if so desired, in writing.*

Entries close November 1, 1895.

English competitors will please send their sets to S. L. Coulthurst, Esq., 78 Collyhurst street, Manchester, England, before Oct. 10, 1895.

American competitors will send their slides to Alfred Stieglitz, 162 Leonard street, New York.

### CLASSIFICATION OF COMPETITIVE PHOTOGRAPHS.

*To the Editor AMATEUR PHOTOGRAPHER.*

In the August number of the *Photographic Times* the editor expresses himself in these words:

"Many competitors possessed very indefinite ideas as to what constituted a 'genre' picture; landscapes, seascapes and all manner of other pictures were sent in."

Later on the editor refers to a picture of mine which was entered in the recent Washington Exhibition, as follows:

"With regard to this picture it is curious to note that it is placed in the Marine Class. Such an action as this is likely to render the classification of pictures for competition a somewhat difficult task."

This leaves the inference that I have purposely placed in the "Marine Class" a picture which is clearly a "Genre Study," which is not the case, as exhibitors were not allowed by the rules to classify their work, that matter being attended to by the managers of the exhibition. I know Mr. Woodbury to be a gentleman, and that the above is clearly an error, but in view of the recent unwarranted attack on me by the impudent editor of the *London Amateur Photographer*, I deem it wise to point out to Mr. Woodbury his little slip of the pen. As to Mr. E. J. Wall, both he and his criticism are beneath my notice.

Respectfully yours,

W. B. Post.

July 29, 1895.

# THE AMERICAN AMATEUR PHOTOGRAPHER.

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A Monthly Review of Amateur Photography.

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VOL. VII.

NEW YORK, AUGUST, 1895.

NO. 8.

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ALFRED STIEGLITZ.

EDITORS

F. C. BEACH.

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## Editorial Comment.

*Our Frontispiece.*—"Nymph of the Lake," by Sarony, is another specimen of this artist's combined photographic and crayon work. The last "Living Picture" found so many admirers amongst our readers is one of the reasons why we publish this.

*The Dudley Salon, London.*—We once more wish to call the attention of all those interested in the highest class of pictorial photographic work to the coming Salon in London. We sincerely hope to see American work well represented. There is undoubtedly good work being done on this side of the water, but somehow or other the best men seem to take but little interest in the general advancement of the art. This is an inexcusable bit of selfishness. Entry forms and all particulars may be had from our editor, Alfred Stieglitz, 162 Leonard street, New York.

*The Third Annual "American Amateur Photographer" Lantern Slide Competition.*—On another page will be found full particulars about this competition. Mr. S. L. Coulthurst, of Manchester, England, has kindly offered to act as receiving agent for all English slides. Intending English competitors will therefore send their slides to him, charges prepaid. Mr. Coulthurst will then send the batch over together.

*The Bridgeport Library Photographic Exhibition.*—Mr. W. J. Hills, Superintendent of the Bridgeport Library, at Bridgeport, Conn., is

desirous of getting together a creditable exhibition of photographs by photographers in general, hoping to show some of the finest examples of art photography. Amateurs in general, and those situated in New England in particular, are urged to send examples of their work. The photographs should be mounted; framing will improve them, but it is not insisted upon. The exhibition will be open about a month, and a large regular attendance is expected. A former exhibition of this character was highly successful. There is no expense except that of transportation to and from the exhibition. Intending exhibitors should send the pictures before Sept. 20, addressed to W. J. Hills, Supt. Bridgeport Library, Bridgeport, Conn.

*The Ground Glass Screen.*—Few, we imagine, have ever noticed that the image from the lens of a camera can be seen with greater distinctness on a screen of transparent glass than upon a ground glass, except that the diaphragm opening is illuminated on such a glass with greater intensity than the image itself, and somewhat interferes with the general idea of the image as a whole. Mr. Keith, of Edinburgh, lately called on us and explained his improvement on a ground glass, whereby an accurate focus is readily obtained. He has a portion of the ground part of the ground glass polished off smooth in the shape of a disc about three-quarters of an inch in diameter, which is perfectly transparent. He first locates the image on the ground glass as nearly right as possible; then he places his eye-focussing glass on the ground glass over the transparent spot, and is able to see that the section of the picture at that point is accurately sharp. It is not a new idea, but is an extremely useful one, and is easily applied to the ground glass of any camera. Mr. Keith is particularly interested in stereoscopic photography, and possesses a beautiful camera for that work, fitted with a Thornton & Pickard shutter behind the lenses. On the top is fitted two minute levels, which enable one to see quickly when the camera is in the right position for an exposure.

Like most Englishmen, he is content with carrying heavy instruments and accessories, believing that there is less danger of ruining the plates than with light apparatus. He had a special knapsack arrangement for carrying his things on his back, which gives him a decidedly National Guard appearance as he tramps along for pictures. He is on a pleasure trip around the world, and spent two or three weeks in New York. We wish him success for the remainder of his tour. All photographers visiting our city are cordially invited to give us a call.

*A Magazine Optical Lantern.*—We were shown a short time ago a new optical lantern, by the inventor, Mr. S. W. Allen, of England, which con-

tains some rather novel features. It is so well described in the *Scientific American* that we make the following extract :

"An English inventor has recently brought out a new style of optical lantern, in which, with the aid of an assistant, the lecturer standing near the screen can manipulate the slides, thus avoiding the possibility of a slide being shown at the wrong time and the wrong way up.

"In connection with the slide shifting and dissolving devices, he has a wooden box containing fifty cells divided by thin metal partitions, with an open transverse slot in the bottom of each cell half the length of a slide. When a slide is placed in a cell, it bridges over the open slot.

"The box of fifty slides, each placed in proper position, is pushed in under the lantern. To manipulate, the operator turns a crank, which in turn operates a piston, causing the latter to rise vertically through the slot in the bottom of the slide cell and push the slide upward, holding it in position to be shown on the screen. When the lecturer desires to change, he presses a pneumatic bulb connected by a pipe to a small air pump on the lantern, which releases a device and permits the piston and slide to drop, the slide falling into the original slide cell; at the same time the entire box of slides is automatically pushed backward a distance equal to one slide cell, bringing slide No. 2 into position to be pushed up and shown, which movement is repeated for each slide. A celluloid eclipser is also moved automatically between the slide and the lens when a change is to be made.

"Such a contrivance will be appreciated by lecturers desirous of economizing and of having pictures shown in the right order. The attachment is capable of being put on any lantern."

*Our Prize Set of Lantern Slides.*—Societies, clubs and subscribers possessing lanterns, and desirous of giving their friends a treat in good photographic art work, should send their applications in, addressed to the editors, without delay, as the routes for the coming season are being arranged.

*Celluloid Diaphragms and Plate Holder Slides.*—Black celluloid can now be had of any desired thickness, and is an excellent substitute for brass in diaphragms, as it is light and the black never wears off, hence there can be no reflecting surfaces. For slides in plate holders we have found it to be superior to prepared cardboard or rubber. Cardboard slides, if dampened, swell at the corners and ends, making entrance to the slot in the holder difficult. Vulcanized rubber is liable to crack if accidentally struck in the right place, and warps with heat. Celluloid seems to make an excellent and durable slide, because it is not affected by dampness, is thin, and slides easily in the holder. The slides for large holders, like 8 x 10, should be cut lengthwise of the grain, in order to ensure greater rigidity.

**Pictorial Photographic Workers will keep the closing of entries for the London Salon in mind.**



## CORRESPONDENCE.

## REPLIES TO A BEGINNER'S IDEAS.

*Editors* AMERICAN AMATEUR PHOTOGRAPHER, New York, N. Y.

*Sirs:* Referring to "Subscriber's" communication in your July issue, and your request for the opinions of your other readers, it seems to me that the picture of a "group with part of them out of focus, and all dark faces," considered artistically, might or might not be a "very poor photographic production" (picture); one would have to judge by the picture. The scene represented might be such that sharp focussing throughout, and a brilliant illumination, would be utterly inappropriate.

Considered purely from a technical standpoint (which I take it is "Subscriber's" meaning), I think the intention of the artist would have to be taken into consideration; if he intended to focus sharply throughout and failed to do so, I would consider the picture a "bad photograph," as the result of more or less bad work. If the intention was to focus sharply on one point and less sharply on the rest of the view or group, in order to produce a certain effect, and the artist failed to obtain that effect, I should consider the picture *to that extent* a bad photograph. In other words, I think a very poor picture may be a very good photograph (technically), but a good picture (if a photograph) cannot be a "poor photograph."

It occurs to me that if Mr. Greger's picture "Homeward" was taken directly after a shower, the sheep may not be "entering a mist" at all, but carrying their "mist" with them. I consider the picture one of the most beautiful things that you have published since October last—since which time I have taken the PHOTOGRAPHER.

ANOTHER BEGINNER.

ROANOKE, VA., July 25, 1895.

*Editors* AMERICAN AMATEUR PHOTOGRAPHER.

*Sirs:* You invite a reply from your readers to the communication and inquiries of "Subscriber" in the July number, hence I offer these remarks.

I would call the attention of "Subscriber" to the fact an amateur does not mean a novice or a beginner. He seems to think so from the line: "I am an amateur in the true sense of the word, only having one year's experience at picture making."

It is doubtful indeed if in that time he has been able to become "an amateur in the true sense of the word," and likewise uncertain if he has really had a year's experience in *picture* making. Rather a year's efforts at making photographs.

As to Karl Greger's "Homeward," the "mist" that impresses "Subscriber" as detracting from the value of the picture is really one of its most realistic features, as, instead of being mist, it is a reproduction of the dust the sheep in the front are stirring, as they pass along the highway. It is as necessary a part of the picture to represent life and action in it as smoke emanating from a steamboat under full headway.

There is no doubt the managers of competitions intend 4 x 5 pictures to be made with 4 x 5 outfits, but using an 8 x 10 size would not necessarily imply an advantage

or the securing of more or better effects. There is a difference in lenses, and a difference in their adaptability to different classes of work. In some cases it might prove more advantageous to use a larger size, but usually it is more advisable to use the size lens and box intended for the size print wanted. FRED. FELIX.

PERU, IND., *July 22, 1895.*

#### CORRECT METHOD OF MARKING COPYRIGHTED PHOTOGRAPHS.

*Editors AMERICAN AMATEUR PHOTOGRAPHER, New York, N. Y.*

*Sirs:* I have read with much interest the article in your July issue relative to the copyright case of Bolles *vs.* Outing Co., Limited.

Referring to the only copy of the copyright laws in my possession, I find that the form prescribed by those laws, (Laws of 1891) does not agree exactly with the form given by you. Section 4,962, Copyright Laws of 1891, provides that notice of copyright shall be given by inscribing upon some visible portion (of the photograph) or of the substance upon which same shall be mounted, the word "copyright," together with the year the copyright was entered, and the name of the party by whom it was taken out, thus: "Copyright, 18—, by A. B." In this form the word "copyright" is used instead of "copyrighted," and the place of business or residence of the person taking out the copyright is not required. Have the laws of '91 been so amended as to make necessary the form given in your article, *vis.* "Copyrighted, 18—, by A. B., of C. D."?

In this connection I would ask how is an artist to protect the copyright of photographs entered in your Pictorial Photographic Competition? It does not appear to me that "Copyrighted, by 'Progressive'" (page 55 of your February issue) or even "Copyrighted 18—, by 'Progressive'" is a compliance with the terms of the statute, which expressly require "the name of the party by whom it was taken out." I think the submitting of the pictures to the judge, especially when they pass through the hands of one or more other persons is a technical "publishing," and that to so publish the pictures without the (actual) "name of the party" taking out the copyright, would at least raise the question of its validity. I have no personal interest in this matter, inasmuch as I have nothing that I deem worthy to be compared with the work of Messrs. Stieglitz, Eickemeyer, Post, Clements, *et ed genus omne*, but simply write for the good of the craft.

Sincerely yours,

H. L. CHEATHAM,

*With N. & W. R. R. Co., Roanoke, Va.*

ROANOKE, VA., *July 25, 1895.*

[NOTE.—Our correspondent is correct as regards the suffix to the word copyright. The law states that the word "Copyright, 18—, by A. B.," be used. His second contention, that a fictitious name is invalid, we are inclined to think is correct.—EDS.]

**Improved Anastigmat Lenses.**—We call attention to the announcement on another page, by the Gundlach Optical Co., of their new Turner-Reich Anastigmat Lens.

See page 359 for particulars concerning our "Beginners' Competition."

## Society News.

**Philadelphia Photographic Society.**—From the June, 1895, issue of the *Journal of the Society* we take the following report of the meeting of June 12th :

President Joseph H. Burroughs in the chair. The report of the Board of Directors was presented and commented very favorably on the California Camera Club's set of Mid-Winter Fair slides, shown on May 22d. Two new members had been elected.

On June 5th, Dr. Charles L. Mitchell gave an interesting lecture on "Holland and Her People."

Mr. Redfield exhibited a curious negative, having portions of the film curled up.

Mr. Ives, on examining the plate carefully, thought that the marks were due to chemical action, being probably a form of coarse reticulation. He had had plates used up in the same way, though the markings were different. He had found that a little silver colored "bug" sometimes attacked the gelatine.

Mr. James F. Wood exhibited a plate of glass which served for forty years as a cover for a daguerreotype. The surface which had been next the silver was etched in a curious manner.

The President remarked that the suggestion was an excellent one, and that the Directors would take cognizance of it.

Mr. John Carbutt read a paper on "The Use of Gelatine Dry Plates in Photo-Engraving." In introducing the subject he said that when, in 1878, the first commercial dry plates were made in the United States, the professionals were slow to use them because of the cost, amateurs being the first to adopt them. The professional photographers, however, soon saw the value of the new plates, and, despite the cost, took them up. It was the same way with process work to-day, and he thought the outcome would be the same.

He said further: Since the advent of what is now called the half-tone photo-engraving method, the making of the negatives has, by the majority of operators, been accomplished by the wet-collodion process, as the more rapid gelatino-bromide plate was not amenable to the treatment of clearing and intensifying used in the wet process. It is my purpose to show and prove that by the use of a specially prepared process plate I have recently introduced, equally as fine half-tone blocks are produced as by the wet-plate process, and are now used by firms who formerly used the wet-plate method, but have laid it aside to the exclusive use of the gelatine process plate. As the gelatine plate is always ready for use, and more sensitive than the bath plate, and the time taken up in developing, clearing and intensifying being about the same as the wet plate, much valuable time is saved, besides relieving the operator of preparing collodion, keeping a silver bath in order, etc. The same plates are used in producing negatives of pen drawings, reproduction of wood engravings for transfer to stone, or producing deep etched blocks. Besides possessing many advantages over the wet-collodion plate; objects can be photographed direct from the original. Instead of copying a photograph, the plates are furnished as plain strippers and orthochromatic.

The following solutions are required for developing, clearing, fixing, reducing and intensifying the process plates :

*Developing formula for half-tone negative (screen) and negatives of pen drawings.*

*No. 1.*

Neutral oxalate of potash.....	1 pound.
Warm water (free from lime salts).....	48 ounces.

Add a strong solution of citric acid, enough to just turn litmus paper red.

*No. 2.*

Sulphate of iron.....	¼ pound.
Warm water.....	34 ounces.
Sulphuric acid.....	15 drops.

*No. 3.—Restrainer.*

Bromide of potassium.....	½ ounce.
Water.....	10 ounces.

*To develop.*—To 5 oz. No. 1 add 1 oz. of No. 2 and 10 drops No. 3.

To get an even-developed plate use sufficient developer to well cover the plate; allow to act until, on looking through, the image appears quite dense; then wash and place in clearing bath one or two minutes.

*No. 4.—Clearing Bath.*

Water.....	20 ounces.
Alum.....	1 ounce.
Citric acid.....	$\frac{1}{2}$ ounce.

Again wash and immerse in fixing bath.

*No. 5.—Fixing Bath.*

Water.....	6 ounces.
Sulphite of soda.....	2 "
Water.....	2 "
Sulphuric acid.....	1 drachm.
Water.....	48 ounces.
Hyposulphite of soda.....	1 pound.
Water.....	8 ounces.
Chrome alum.....	1 ounce.

Dissolve in the order given, add the solution of sulphuric acid to the sulphite of soda, add this to the hyposulphite, and finally add the solution of chrome alum.

*No. 6.—Reducing Solution.*

Ferrocyanide of potassium.....	50 grains.
Water.....	10 ounces.

*No. 7.—Bleaching Solution.*

No. 1.

Bichloride of mercury.....	240 grains.
Chloride of ammonium.....	240 grains.
Distilled water.....	20 ounces.

*No. 8.—Cyanide of Silver Solution.*

Distilled water.....	6 ounces.
Cyanide of potassium, C. P.....	60 grains.
Distilled water.....	2 ounces.
Nitrate of silver.....	30 grains.

Pour the silver into the cyanide solution while stirring, and mark the bottle "Poison."

In place of the latter, a 10 per cent. solution of sodium sulphite may be used.

*Notes On Using the Foregoing Solutions.*—Supposing that 6 ounces of developer are mixed, and a number of plates are developed; if bulk is reduced to 4 ounces, add 2 ounces of a fresh mixture and no bromide; also if what is left is placed in a bottle, on using it the next day, mix half of it and half of fresh mixed developer, and it will be found to work more uniformly than developer freshly mixed, the old acting as a restrainer. *Always* use No. 4 solution after washing off the developer, as its function is to remove any trace of iron left in the film (which, if not removed, will leave an opalescence in the clear spaces), also to harden the film and prevent its swelling up. After a stay of not less than two minutes in No. 4 solution, the negative is thoroughly rinsed and placed in No. 5 fixing bath, and when thoroughly cleared removed. Do not proceed to wash out the hyposulphite as is ordinarily done, but simply *pass* the negative through water to remove the surplus hypo solution on surface, then examine with a magnifying glass to determine whether any reducing or clearing is required, either as a whole or locally, which I consider is best done at this stage, as the hypo left in the film acts with the reducer, ferrocyanide of potash, much better in clearing the transparent places than if a mixture of hypo and ferrocyanide had been used after all hypo had been washed out; the five grain solution of No. 6 can be used as a bath in a white porcelain dish, and the reducing effect watched closely, then removed and its action immediately stopped by washing. If any part of the negative is found to require local reduction, the No. 6 solution can be applied to the part to be reduced with a tuft of absorbent cotton or large round camels' hair brush, and then washed to remove all hypo. If intensification is required, it is best done after the negative has been allowed to dry; but as time is of the utmost importance in this class of work, intensification can be done now, the only danger being of any hypo remaining in the film, which would cause a yellow stain after being intensified. To avoid this place in No. 4 for one minute, then wash and place in the mer-

cury solution until whitened, and then wash again, and reduce the chlorized image to black, either with a 10 per cent. solution of sulphite of soda or the cyanide of silver solution; the latter gives the clearest and most dense deposit; wash for a few minutes and dry spontaneously, or, if desired to dry quickly, it may be dried in warm air at a temperature of 90° to 100°. Where electric light is used, if the negative is placed before a small electric fan, it will dry very rapidly, as the film of gelatine on these process plates is very compact, and does not swell up to any appreciable extent. I think I have now explained sufficiently the mode of using the process plates for producing half-tone negatives from which blocks can be made that will furnish prints of the highest quality, and enable those who are tired of the vagaries of the *old* wet method to realize that time, patience and money are saved by adopting the *new*. For those who do not use a prism to reverse the image (Carbutt's) stripping process plates can be used, and are treated just the same as plain plates; when dry they are placed on a leveling stand, on three points, brought to a level, the plate covered with a (Carbutt's) stripping medium, using 2 oz. for 8 by 10 plates; 1½ oz. for 6½ by 8½ plates; ¾ oz. for 5 by 7. In a warm room they will dry in twelve hours, or over night.

The illustrations here shown are examples of commercial work, produced as described, from my gelatine half-tone process plate.

Mr. Ives said that when he was working actively at the half-tone process, one reason why he did not use gelatine dry plates was because he could not get such suitable plates for this purpose as Mr. Carbutt was now producing. He made some experiments in that direction several years ago and got excellent results, but the gelatine on the plates was so thick, the necessary operations took so much time as to make the use of dry plates unprofitable. While he believed in the use of dry plates, especially by those who had no experience with the wet-collodion process, he knew that the wet was capable of giving every gradation and modulation in the hands of one who understands the business. A beginner in these days would perhaps learn sooner with dry plates than with wet, but would get no better results than it was possible to get with wet.

Mr. Wood asked whether the element of time should not be considered, and whether the advantage was not on the side of the wet process?

Mr. Ives replied that that would be the case where there was but a single plate to be made. It was not necessary, however, to finish one plate before beginning another. The question was how many plates can be turned out in a day, not how quick one can be finished. In his own experience he had, in an emergency, turned out a half-tone plate, blocked for the press, in three-quarters of an hour.

Mr. Frederic E. Ives then read a paper on "Orthochromatic Photography With Ordinary Plates." A number of slides illustrating the paper were shown upon the screen.

Mr. Ives' paper is as follows:

Can color screens be made to secure orthochromatic photographs with ordinary plates? I have selected from hundreds of spectrum photographs eleven which appear to show not only that they can, but also the reason why almost everybody who has tried has failed to obtain such results.

The plates used were Seed ordinary, sensitometer No. 27. The made-up screens were colored films of gelatine and collodion on selected plate glass, sealed by cementing to another plate glass—a method which I published ten years ago, but which has recently been credited to a writer who merely republished it without acknowledgment. Only three dyes are represented, although many others give just as remarkable results.

The photo-spectrograph—the fifth one that I constructed—contains a train of light crown-glass prisms and an ordinary photographic lens. Crown-glass prisms

were used because they are more transparent to the dark violet and ultra-violet rays than flint-glass prisms.

The photographs are all of the solar spectrum, made on very clear days, between 1 and 4 o'clock P. M., as follows :

1. Ordinary photograph.
2. Through light yellow glass.
3. Through deep yellow glass.
4. Through deep naphthol yellow in gelatine (brilliant light yellow).
5. Through light chrysoidine in collodion (impure yellow).
6. Through medium chrysoidine in collodion (deep orange).
7. Through deep chrysoidine in collodion (orange red).
8. Through multiple yellow in collodion (bright golden yellow).
9. Through multiple yellow and naphthol yellow (bright golden yellow).
10. Through deep chrysoidine and naphthol yellow (orange red).
11. Through lighter naphthol yellow.

The photographs are submitted for examination, and I have also made a drawing representing the density curves, in such a manner that they may be compared at a glance. The curves are drawn by the eye, and are not, of course, strictly accurate, but are sufficiently so not to be misleading for the purposes of this investigation.

The first curve in the drawing marked "A" represents the luminosity of the spectrum.

It will be seen that the photographs through yellow glasses differ so little from the ordinary photograph as to indicate no material advantage in the use of a yellow glass with ordinary plates. It is true that the deep yellow glass perceptibly reduces the relative action in the ultra-violet and violet, but the maximum action is still in the blue or blue-green, and neither the ultra-violet nor violet are cut out, nor is there any perceptible action in the yellow.

The deep naphthol yellow, on the other hand, although several shades lighter to the eye than the deep yellow glass, cuts out completely all of the ultra-violet, violet, and violet-blue rays, confining the action chiefly to the blue-green and green. It is evident that with this screen greens and light yellows (which reflect the green rays) should photograph lighter than true blues, showing thereby a very distinct gain over ordinary photography for many subjects.

The three photographs through chrysoidine show how little may depend upon the kind of dye used and how much on the quantity. A chrysoidine screen could be made so light that it would not remove the point of maximum action out of the blue ; the lightest screen used moved it into the violet, while a deeper one moved it into the ultra-violet, and a still deeper one gives the strongest maximum, away off at the other end of the spectrum, in the orange-red.

The multiple-yellow screen cuts out all of the blue and blue-green of the spectrum, and carries the action well into the red, with a maximum in the yellow green ; but although this screen is an intense golden yellow to the eye, the strongest action is in the dark violet, and extends a long way into the ultra-violet. More than three-fourths of the total action is by dark violet and ultra-violet rays, although a spectroscopic examination under ordinary conditions would not discover the small amount of violet light that gets through.

The addition of the naphthol yellow to the multiple yellow does not noticeably alter the color of the screen ; yet by cutting out the residue of violet and ultra-violet, confines the action to the yellow-green, yellow, orange and red rays, the strongest action being in the yellow-green. Even this screen is lighter to the eye than the deep yellow glass, yet secures on the ordinary plate *relatively* more action in the orange and red than any yellow screen will give with commercial "isochromatic" or "orthochromatic" plates.

The most promising combination of all is that of chrysoidine and deep naphthol yellow. The deeper chrysoidine screens do not transmit any violet light that can be detected in the spectroscope, even with direct sunlight, open slit and blue glass to screen the orange-red and yellow rays ; yet without the addition of the naphthol yellow or an equivalent, most of the action is at the violet end of the spectrum. Reference to the chrysoidine screen photographs will show that with this combination the action can be not only confined to the more luminous portions of the spec-

trum, but that by varying the amount of chrysoidine, the maximum action may be kept either in the green, yellow-green, yellow or orange, as desired.

A gaudy-colored chromo-lithograph was photographed through all of these screens except the lighter naphthol yellow, and the result was in each case what would have been predicted from an examination of the spectrum photographs, except that when the screens transmitted rays at both ends of the spectrum the relative action by the more refrangible rays was much greater than the spectrum photographs indicated. For instance, in the spectrum photograph, made through the deep chrysoidine, about 40 per cent. of the total amount of action appears to be at the red end, yet the exposure for a street view had to be increased to about eight times when the naphthol yellow was added. It was thus proved that even with the crown-glass prisms the photo-spectrographic test did not indicate anywhere near the true photographic value of the more refrangible rays. What is equally remarkable, the same chrysoidine screen which in the camera allowed most of the work to be done by invisible rays, showed no action whatever in the ultra-violet when tested in a costly direct-vision photo-spectrograph, not even when the exposure was so long as to produce considerable halation and general fog from scattered light. No doubt large direct-vision prisms, made with some of the new Jena glasses, might show a different result.

The chromo-lithograph contained the following colors: three shades of blue, strong green, deep yellow, deep red, and purple. Photographs made through the yellow glasses, and all screens transmitting ultra-violet rays, rendered all blues white or nearly so, and yellows and dark greens nearly black. The photograph made through deep naphthol yellow rendered green and deep yellow and medium blue all as medium light gray, red as black. The photograph made through combination of multiple yellow and naphthol yellow rendered ruby red and dark blue about alike, green lighter, and yellow nearly white. Although the density curve in the spectrum photograph does not indicate that this is an ideal screen, it is a *yellow* screen that gives truer results on ordinary plates than yellow glasses give on commercial isochromatic or orthochromatic plates. The combination of deep chrysoidine and naphthol yellow rendered dark blues and greens almost black, delicate sky blue darker than bright yellow, yellow not quite white, deep red rather too light. A compromise between this result and the one before it would be better than either; it could be obtained by using a little less chrysoidine. Such a result is shown in No. 5. The exposures (in direct sunlight) varied from a small fraction of a second for the ordinary photograph to two minutes for the one made through combination of deep chrysoidine and naphthol yellow. The exposures for the spectrum photographs also varied from a fraction of a second to two minutes, the aim being to obtain good but not excessive density in the parts showing most action, with the same development that would ordinarily be given for a correctly exposed landscape.

The results which I have presented to your notice lead me to conclude:

*First.*—That the relative amount of action by the dark violet and ultra-violet rays in ordinary photography is far greater than has generally been supposed.

*Second.*—That spectroscopic examinations of color screens, and even photo-spectrographic tests, as ordinarily conducted, are not competent to discover their true photographic value.

*Third.*—That the first essential in a color screen is that it shall cut out the dark violet and ultra-violet rays, and that to failure in this particular is due the inability of most experimentalists to obtain improvement in color rendering by the use of color screens with ordinary plates.

*Fourth.*—That with suitable compound color screens much truer color values can be obtained on ordinary plates than yellow glasses will give on commercial "isochromatic" or "orthochromatic" plates.

This is not a new discovery. I demonstrated the facts by actual experiment, and showed results which should have been as conclusive as anything I have here, at the Franklin Institute, nine years ago. In fact, the most striking illustration of the value of the method which I have with me to-night is the identical photographs which I then showed, in comparison with the Prang chromo from which they were made. My excuse for bringing the subject up again is the prevailing ignorance of

the facts, as indicated by such statements as the following, which I quote from well-known photographic journals:

"Questions that have been addressed to us in regard to the employment of the yellow screen with ordinary or non-color sensitive plates, as well as some remarks on the subject that have recently been published [in *Journal of the Camera Club*, London, February, 1894, page 28?], indicate the existence of erroneous ideas on the point. \* \* \* We are writing for the express information of many of our professional and amateur friends. \* \* \* Years back, to test this point of the influence of the yellow screen on ordinary plates, we subjected the matter to experimental examination, the issue being that the only observable effect was to increase the exposure without altering the relative tone renderings, and more recently we have repeated the experiment with the same results. \* \* \* The idea is false in theory and unsound in practice. \* \* \* We unhesitatingly negative the assumption that for any practical purposes the use of a yellow screen with sensitized plates not corrected for color is of the slightest value."

"It is now clearly determined that the use of ortho-chromatic plates for rendering correct color values is absolutely necessary."

"I have often heard it said, and have often seen it written, that a yellow screen gives an iso or orthochromatic effect with an ordinary plate. My opinion of a man who says this is that he is not a fool, but a deliberate fibber, if not worse. No one who has ever tried this once would make the statement. And I most emphatically deny that a yellow screen has any effect on an ordinary plate, except to make the negative worse than it otherwise would be."

Of course, this is not the kind of orthochromatic process to be recommended for practical purposes in a London fog. It is quite practicable for the reproduction of paintings in direct sunlight, or even in the studio, when the light is good. I have photographed a good many paintings in the studio by this method. It is also practicable for general outdoor photography, where time exposures can be given. I have employed it with unqualified success when thousands of miles from home, and having no "color-sensitive" plates with me. At Pompeii I gave an exposure of five minutes on a mosaic fountain. The guide, who evidently took me for an inexperienced amateur, said it was not necessary to give such long exposures; he had seen the same object photographed with "cap off and on" exposure. Such a result as I obtained would justify a half-hour's exposure, if necessary.

Some of the compound screens give better results with ordinary plates than ordinary yellow screens do with commercial "isochromatic" or "orthochromatic" plates, and the method is therefore to be preferred under some circumstances, although it is possible with quite different compound screens to obtain the same results on the commercial color-sensitive plates with shorter exposures. For instance, a combination screen of brilliant yellow and fuchsine can be made that will secure on a commercial "isochromatic" plate a photograph which pretty accurately represents the luminosity of the spectrum, and always gives nearly photometrically correct translation of colors into monochrome when used with such plates.\* The naphthol-yellow and chrysoidine screen with ordinary plates require much longer exposures than the brilliant-yellow and fuchsine screens with isochromatic plates, but the results are substantially the same.

A variety of questions were asked by Messrs. George Vaux, Jr., J. Hudson Chapman, Dr. Charles L. Mitchell and others, as to the length of exposure required, the fugitive nature of the dyes used in making the screens, etc.

Mr. Ives said that two of the dyes which he had used in making the screens for these experiments were rather fugitive, but that screens could be made to give substantially the same results with dyes which were not so fugitive.

Mr. Ives also exhibited upon the screen a slide from a negative made by an exposure of thirty seconds through a black screen. The view was fully exposed and full of detail. The screen was made up of a combination of glasses and dyes, and was so opaque to the eye that a gas flame could only with difficulty be seen through it. The experiment was made to show the great action upon the photographic plate of light rays which are totally invisible to the human eye.

After the adoption of a cordial vote of thanks to Messrs. Ives and Carbutt, the meeting adjourned.

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\*I made such screens for a London firm that was awarded the medal and a premium for the best photographic negative of a painting in a recent competition.



**The Photographic Society of Japan.**—An ordinary meeting of the above-mentioned Society was held in the rooms of the Chigakukyokai (Geographical Society), Nishikonyacho, Kiobashi-ku, Tokyo, on Friday, June 14th, at 5 P.M., Mr. C. D. West in the chair.

The minutes of the last meeting having been printed in the *Japan Mail*, and in the Japanese photographic periodicals, were taken as read.

Mr. K. Ogura, who had recently returned from China, where he had been official photographer to the Japanese army, during the recent war, showed some interesting results of his work.

Mr. W. K. Burton showed a machine designed by Professor John Milne, F.R.S., of photographing animals—or thieves—in the dark. The slightest pull on bait attached to a thread, or the touching of a stretched cord, ignited a quantity—small or great, as might be considered desirable—of flash powder, placed alongside a camera, and anything at the point of contact was photographed.

The meeting ended with a vote of thanks to the Chairman.

**American Lantern Slide Interchange.**—The Manager reports the receipt for the use of Interchange on July 19th, of an interesting collection of 122 slides from the Photographic Society of Japan. Each slide was carefully wrapped in a sheet of rice paper and packed in bulk in two small wooden boxes. The end slides in one box were cracked, but the others came safely. The Society apparently has no uniform plan of labeling the slides; no descriptive label is attached, but the thumb and number label is placed mostly on the upper left hand corner of the cover glass. A few of the slides are not matted, and some have extraordinarily thick glass. It is, however, an instructive and interesting set, and the thanks of the Interchange are extended to the Society, and to Mr. W. K. Burton in particular, for sending it.

Mr. E. M. Haskell, Lantern Slide Director in the New Orleans Camera Club, says the season is so short in their city that it is probable the Club will withdraw from the Interchange for one year.

The several clubs forming the Interchange elect, prior to October 1st, Lantern Slide Directors, who in turn elect by mail vote, in October, a new Board of Managers for the season 1895-96.

The conditions of new clubs wishing to join the Interchange are that they submit to the Board of Managers a set of 50 slides, work by their own members, and pay a fee of \$10. The slides are then examined, and if more than 50 per cent. are found to be of good technical excellence, the club is usually admitted. If, however, the standard is too low, the set is returned, and three-quarters of the entrance fee returned.

It is just a decade since the Interchange was originally organized; many clubs have enjoyed the annual sets of slides, especially those from foreign societies. There is much neglect on the part of the contributing clubs to provide suitable descriptive matter with the sets of slides sent in.

Each club should appoint some good organizer to look after this branch of the subject.

A set of 150 American slides were sent to Japan on February 1st, for use there during this fall.

Clubs desiring information about the Interchange should address Mr. F. C. Beach, Gen'l Manager, 361 Broadway, New York.

**California Camera Club.**—The *San Francisco Chronicle*, of June 29th, says: "The plan of the California Camera Club to secure a collection of photographs of familiar and historic buildings and localities in this city before they disappear, or are transformed, has not only met with the hearty approval of its members, but has given a valuable suggestion to amateur photographers who are not members of the club. During the last two weeks, particularly during the last few days, a great deal of excellent work has been done in this direction. There are scores of places in the city which have some local history worth repeating, and it will not be long before a photographic record of them, at least, will be made. The California Camera Club will preserve its best photographs in albums, using some of them for a set of lantern slides.

"Several amateur photographers who are prominent locally are now using their cameras with some system in Golden Gate Park. There is hardly a place in the great pleasure ground which has not been 'snapped' at one time or another, but the plan now is to take a series of pictures which will illustrate the chief beauties of the Park, from the Panhandle to the beach.

"The directors of the California Camera Club held an important meeting on June 25th. The various reports made showed the club to be in a better condition now than it ever was before in its history. For many months the membership of the club showed no increase. On the contrary, there seemed to be a tendency toward a decrease. This condition has changed, and on the night of the meeting it was reported that there were thirty applications for membership, many of the applicants being active in the field of amateur photography.

"The report in reference to the California Camera Club Cyclists was also of considerable interest. When a cycling annex to the club was suggested the project was viewed with suspicion by those who feared an interference with the purposes of the club. The annex was organized, however, and has proved to be a great success, stimulating the interest of its members in amateur photography. Some of the most artistic pictures of this season have been taken by the cyclists, and all protest against the annex has disappeared.

"The cyclists of the club had an enjoyable run to Tocaloma on June 23rd. Owing to the distance there were no ladies in the party. The trip was marred by only one accident. One of the leaders of the party, C. S. Close, narrowly escaped serious injury. He was riding full speed down the road, when his wheel swerved, and he was carried over a cliff fifty feet high. He succeeded in catching the limb of a tree near the top of the descent and saved himself. His wheel was wrecked, and he was compelled to walk a distance of three miles. He secured, however, some of the most artistic pictures of the journey. His camera, fortunately, was saved.

"Ex-President E. S. Gray is looking after the best camera he can obtain. He has revived his interest in amateur photography, and intends to do more of the work which made him one of the best amateur photographers on the coast. For years he made a special study of the old missions, and in his treatment easily overshadowed all others who attempted the subject. He has the best collection of photographs of the missions in the State. He intends now to try some new field and give to it the same attention bestowed upon the former."

On July 1st, Rev. E. R. Dille lectured on "Patriotic America," being the sixty-first illustrated lecture at the Metropolitan Temple. During July the slides of the Toronto and Chicago Camera Clubs, the St. Louis, Memphis and Schuylkill Clubs and *Photography Prize Slides* were shown.

**Society of Amateur Photographers.**—No regular meeting was held in July, but on Wednesday evenings slides were tested. One member, Mr. Alfred Stieglitz, has been doing considerable work in this line, and an exhibition of his work is promised during the fall. From the notes in the July *Journal of the Society*, we learn that Mr. Alfred Stieglitz won a silver medal, fourth prize, platinotypes in the Washington, D. C. exhibition held by the National Camera Club, 1st, 2d and 3d of July. He also took gold medal and five dollars in gold for first prize in portraits, Class F. In Class D, marines, first prize, gold medal and five dollars in gold, was secured by Mr. William B. Post. Second prize in same class was awarded to Mr. Harry Coutant.

The slides of the Photographic Society of Japan are booked to be shown on September 27th.

A committee on "Photographing the Yacht Races" has been appointed, consisting of Messrs. Elgar, Burton, Johnson and Dayton. Two new active members have been elected to the Society.

### ILLINOIS COLLEGE OF PHOTOGRAPHY.

We have mentioned in a previous number this college of photography. From a circular letter we have received, signed by the President, L. H. Bissell, the institution may be regarded as a success. A portion of the letter is as follows:

The need of more thorough training in the art-science of photography is apparent. To fill this "long felt want" the Illinois College of Photography was established, and it is gratifying to know that the enterprise is at once meeting with a generous reception by young people desiring to learn the business.

Students are already in attendance from New York and Kansas, new ones coming in every week, and the attendance upon our fall term, beginning Sept. 2d, promises to exceed our most sanguine expectations. There can be no question but what this institution will prove of great benefit to all photographic supply houses and the trade generally, and we therefore respectfully solicit the hearty co-operation of the same, believing it will be to our mutual advantage.

The college is located at Effingham, Ill. *The Effingham Republican* thus describes its working: "The board of directors is composed of Benson Wood, Henry B. Kopley, E. N. Rinehart, Judge W. B. Wright, Judge S. F. Gilmore, Dr. Henry Eversman, Mrs. Nellie White, L. H. Bissell and Dr. W. B. Dennis.

"The workings of this institution are very much the same as those of any college of art. It has its regular course of instruction, and follows certain lines in preparing the student for his profession. Systematic training is commenced, and the student is taught inductively the various branches of his art. The laboratories are thrown open, and by experiment the student acquaints himself with the action and use of his chemicals. The library contains treatises on the different branches, and the texts are closely followed in the lectures. The sciences of chemistry and natural philosophy are treated at length, and their application to photography is pointed out. In fact, the student becomes the scientist and investigator first, and then as his skill advances and his tastes develop, he becomes the artist.

"President L. H. Bissell is an artist of twenty years' experience. He takes the department of lighting, posing and practical business methods. Prof. Edward De Moulin takes the department of half-tone zinc etching and engraving. Prof. Lucian M. Cornwell has the department of practical chemistry. Prof. W. J. Brinkley is theoretical chemist, and is director of laboratories. Prof. J. N. Hickman has the printing and dark room. Prof. R. C. Whittlesey looks after the retouching department. Prof. L. F. Schifferstein takes the chair of optics, and gives class lectures on the construction of the human features.

"The coming school year bids fair to be more successful than expected. Students from all over the country are enrolled, and already a number of States are represented."

**GOOD ROADS FOR CAMERA BICYCLISTS.**

Mr. Albert A. Pope, the indefatigable worker for good roads, describes in an open letter what has been done in Massachusetts. He says the plan is to build, section by section, such roads as will connect the great centers of trade and join with through roads in other States, so that both local and interstate communication will be benefited. Under date of January, 1895, the Massachusetts Highway Commission has rendered a report which covers the work of the past year, and this publication should be consulted by those who are considering legislation.

The provisions of our law will permit contracts for the construction to be let to municipalities or to private corporations, but the former arrangement is preferred, as it is more effectual in teaching the people the art of road building, and protects the State against cheapening the work by the importation of foreign laborers, an element which is apt to be objectionable.

A resident engineer is appointed by the commission, and it is his duty to be in attendance and keep a correct account of all items to be paid for by the State.

Wherever the traffic was of sufficient proportions to warrant it the roads have been broadened. The advantage to owners derived from the construction of the way is, as a rule, so much greater than the injury to them by widening the road that, in a large majority of cases, the town officials have been able to procure releases without any cost.

Thirty-eight sections have been contracted for, and only eight of them are to have a width of eighteen feet of hardened surface, all others being fifteen feet wide. As the primary object is to get length of way, the Commissioners are considering the advisability of building single-track roads in the thinly settled districts. These would not be over nine feet wide, with here and there portions of double width as convenient passing points for carriages. A mile and a half of such roads can be built for less than the cost of a mile of fifteen feet width, and the advantage in getting produce to market is not lessened, provided such construction is confined to localities where the average traffic is from six to eight vehicles an hour.

Progress has been made in the laboratory work on the road building stones of the State. Experiments of this kind are carried on at Harvard University in the Lawrence Scientific School, whose dean, Prof. N. S. Shaler, is a member of the Highway Commission. The chief aim of these inquiries has been to determine the qualities which constitute fitness for road making. This will be of value to the Commission in enabling them to utilize the road material near at hand, and thus lessen the cost of construction. As this phase of the work progresses, maps are made, showing the location of all deposits suitable for road building.

A number of towns have already appropriated money to build their streets in the same careful manner as those constructed by the State, and others have purchased road machinery, with the intention of extending the work on roads other than State highways.

Careful consideration has been given to the plan of planting shade trees along the highways. With this end in view, experts have been consulted concerning the best varieties for the purpose, and the wayside trees have been examined, so as to determine the species well adapted to the climate and soil of Massachusetts.

As the estimated expense of procuring and planting these trees is not less than one-half a million dollars, the commission has rightly made this question secondary to road building, but in the meantime they are collecting such data as will enable

them to work with profit on the adornment of the roads after the construction is well in hand. The American and English elms have the advantage of fairly rapid growth, with shade high above ground, and the leaves falling from them give but little obstruction to the gutters. They have the disadvantage of being subject to the attacks of insects, so that the cost of protecting them from these pests would be considerable. Maples grow well and are beautiful, though they often shade the road too much. It is the custom in parts of Europe to plant the roadsides with trees which yield profitable crops. In France and Germany, for example, cherry trees abound. In these countries the yield of the wayside trees belongs to the neighboring land owners, but in some cases to the community, and their product is well guarded by law. There will be more or less experimenting on the part of the Commission before they decide upon the species to be planted. The law provides for the beginning of this work in the spring of 1895, and from that time it will be carried on slowly, so as to give us the benefit of experience.

Every State should make a beginning on road improvement. In thinly settled regions of the country, where the people do not feel able to undertake much, they can do no better than to start the reform by constructing sections of single-track roads. No community can afford to neglect the common roadways. Our prosperity is too intimately connected with the facilities for communication.

I have spent many thousands of dollars in inaugurating and advancing this reform, and continue to take an active part in it, though for a long time I have not addressed you on the subject.

The interest is now general, and the leaders numerous, consequently there is a demand for road news, more especially for the recent advancements in the line of actual experience.

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#### **Prize Offered for Instantaneous Photographs of Large Soaring Birds.—**

Mr. Samuel Cabot, of the Boston Camera Club, 50 Bromfield street, Boston, Mass., in the name of the club, offers two prizes for instantaneous photographs of large soaring birds. First, a prize of one hundred dollars (\$100) for the best instantaneous photograph of a large bird in the act of soaring; second, an additional prize of fifty dollars (\$50) is offered for the greatest number of instantaneous photographs offered by one photographer, of large birds in the act of soaring. By "soaring" is meant the attitude of the bird in the air when no wing motion is apparent.

The purpose for which the photographs are desired—namely, the study of wing angles and a possible movement, unappreciable to the eye of the observer—necessitates that the figure of the bird should be at least half an inch long on the print. If the figure is small, but clearly defined in detail, enlargements will be preferable to contact prints, and will be judged of equal merit with direct prints. Careful notes should be written on the back of each picture, detailing the appearance to the eye, the quickness of the shutter, the angle of camera, etc.; also the full name and address of the contributor. Two prints of each picture should be sent. All contributors must prepay the transportation charges of their exhibits (which may be simply card mounts), and in no case will they be returned. Photographers throughout the world are cordially invited to compete.

This offer remains open until October 1, 1896; but if on that date at least 100 different photographs have not been received, the limit of time may be extended, of which due notice will be given. The club freely offers its galleries for the exhibition

of the pictures submitted, and pledges its best efforts to select judges fully competent to decide upon their merits and to make the awards. All contributions should be sent to the Boston Camera Club, 50 Bromfield street, Boston, Mass., U. S. A., and marked "Cabot Competition."

**The Tintometer.**—Mr. H. Snowden Ward, editor of *The Photogram*, on a visit from London here, brought with him a sample of this interesting instrument, and exhibited it before the American Institute in this city, at 111-115 West Thirty-eighth street, on Wednesday Evening, May 29th.

It is used to test, by color, the strength of solutions, powders, dyes, etc., by comparison with a standard. A tube of wood, with a longitudinal division in the center, is set at an angle. In one side, opposite the lower end of the tube, on a plate or flat surface, is placed a powder of standard whiteness; on the other side, parallel with the standard powder, is placed the pigment, transverse to its length, or powder to be tested—say it is chrome yellow. At the bottom of the tube are slots for the insertion of glasses, an inch wide by two inches long. Yellow glasses are then inserted in the grooves between the white powder and the eye until the color to the eye exactly matches the color to be tested. The glasses are marked from one-tenth upwards on the decimal plan. Having secured the right tint, the record is made and noted. If, at any time, the same color is wanted, it is only necessary to refer to the record and order from that, supposing the party furnishing the colored pigment to have a similar standardized instrument. Mr. Ward said of it that it is an instrument for the measurement and recording of colors and luminosity. It is the result of twenty-five years' work by Mr. J. W. Lovibond, the Color Laboratories, Salisbury, England, and though used considerably during the last seven years in England, it is very little known in the United States.

By its means the color and brilliance of any object can be measured and recorded, so that the color can be exactly matched at any future time.

In research work it is used in the estimation of color, and in exact quantitative analysis, by the measuring of color and turbidity of solutions of known substances, etc., etc.

We are informed that Mr. Emil B. Meyrowitz, 104 East Twenty-third street, is the agent for the apparatus in the United States.

In practical work it can be applied to all trades that deal with questions of color, and in many cases the color test has replaced chemical analysis, as much easier and quicker, and equally certain. Examples of this are in the standardizing of fats and petroleum; (*e. g.*, the Petroleum Syndicate, England; the American Lard Company, Chicago, etc.) estimation of quality of malt, etc. (*e. g.* Guinness, Limited, Dublin, and other brewers), testing purity and turbidity of water, (*e. g.*, Massachusetts Board of Health, Liverpool (England), Corporation Waterworks, etc.) Amongst other commercial applications already worked out are: estimation of carbon in steel; lead contamination of water; valuation of flour; of all classes of pigments and paint bases, etc.; standardizing and blending of printing inks, etc., etc.

In medical work the instrument provides a test and exact measure of the nature and extent of color-blindness, and a means of diagnosis by the examination of urine, etc., etc.

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**Pictorial Photographic Workers will keep the closing of entries for the London Salon in mind.**

## BOOKS RECEIVED.

"WON'T YOU COME TO MY TEA PARTY?"—A popular song by A. H. Fitz, of Minneapolis, Minn. The particular novelty on the cover of this sheet of music is a half-tone illustration from life, reproduced from a photograph by Mr. A. L. Eidemiller, President of the Minneapolis Camera Club. It is quite an interesting picture, showing two youngsters playing drinking tea at a table. A Minneapolis journal thus comments on the picture:

The snap shot effect, which has been commented upon, is a high compliment to the unaffected grouping and expression finally obtained.

"A good many people," said Mr. Eidemiller, "have asked me how I obtained such a successful result. You see I have a passion for amateur photography, and you may say that my specialty is children. I am always making photographs of my little son. A lady, a friend of my wife's, saw some of my work and asked me to try my hand on her little daughter. I consented, and one afternoon she brought the child to my house and I took a good many pictures of her. After that it occurred to me to take the two children together. After many trials, I got them together at a little tea table, and they became so interested in their tea party that they almost forgot their photographs were being taken. After two hours' trial, I caught them in just the right position, and the picture so much admired was the result.

"Some time ago I showed the photograph to A. H. Fitz, the well-known local song writer, who is a friend of mine, and he immediately asked me if I wouldn't let him use the title and the picture for a song on the same subject. I consented, and he at once wrote the song which is becoming so popular."

1895 BLUE BOOK FOR AMATEUR PHOTOGRAPHERS. Walter Sprange, editor, Beach Bluffs, Mass. Price, \$1.00.

A revised directory of American photographic societies, containing lists of members, also of dealers in photographic goods in the United States, Canada and Mexico.

There are several illustrations, much useful information and many valuable formulas. The enlargement to include lists of all dealers and dark rooms is a step in the right direction, which will make it a book to be desired by every active photographer.

THE AUSTRALIAN PHOTOGRAPHIC REVIEW.—A new, handsomely printed illustrated monthly published in combination with the *British Photographic Review of Reviews*, at Sidney, Australia. Mr. Edwin J. Welch is the editor.

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## Editorial Table.

**Decide Not to Exhibit.**—The following is a circular sent out lately by prominent plate manufacturers:

As there has been a feeling at the various Photographers' Conventions, that the manufacturers of photo supplies have been securing too much attention, and that the exhibits made and the prizes given by them on such occasions rather diverted the interest of the members from the displays and prizes of the associations, we, the undersigned manufacturers of dry plates, hereby agree to make no displays, nor offer prizes of any kind at future photographic conventions.

We feel it our duty to take this course, and trust by doing so to have the good will and wishes of the entire fraternity. We will continue to aid and support the conventions, and will be ably represented, and pleased to meet our many friends on all these occasions.

Yours very truly,

(Signed) M. A. SEED DRY PLATE CO.  
G. CRAMER DRY PLATE WORKS.  
HAMMER DRY PLATE CO.

**The Platinotype Business.**—We are informed that Messrs. Willis & Clements, of Philadelphia, have been so successful in the introduction of the cold process platinotype paper that they intend hereafter to devote their whole attention to its manufacture, and give up their electric light, solar, contact and art business, which they are desirous of disposing of, and suggest that it is a good opportunity for some photographer to benefit himself. The popularity and growth of the platinotype print, in the face of numerous other cheaper kinds of paper, shows that it has a good future. It is generally a fact that those prints which take awards at exhibitions are platinotypes.

**The Sepia Platinotype.**—We were shown, a short time ago, examples of sepia platinotype prints made on the improved platinotype paper of Mr. S. Peebles Smith, of Newark, N. J., which were very good, and, we are informed, can be made on the same paper used for the ordinary platinotype. The only manipulation required is the substitution of a different developer for the ordinary neutral oxalate of potash.

Mr. Smith has been experimenting for a long time in perfecting this paper, and is now about placing it on the market. He uses sealed tin cans for preserving it.

## United States Photographic Patents.

*September 4.*

525602.. Tray Rocking Machine. J. Hess, Mifflintown, Pa.

*December 4, 1894.*

530327. Tension Spool for Roll Holders. T. M. Clark, Newton, Mass.

530486. Camera Shutter Mechanism. T. V. Jansen, Copenhagen, Denmark.

*Design Patent* 23853. Picture Frame. R. Liebmman, New York, N. Y.

*December 18.*

531012. Photographic Plate Holder. J. E. Thornton and E. Pickard, Altrincham, England.

531040. Photochromoscope and Photochromoscope Camera. F. E. Ives, Philadelphia, Pa.

530955. Folding Camera. G. D. Milburn, Rochester, N. Y.

*December 25.*

531416. Folding Photographic Camera. H. Hill and A. L. Adams, London England.

*January 1, 1895.*

531915. Flash Light Burner. H. C. Fairchild, Sandy Hook, Conn.

531994. Lens. L. Gathmann, Chicago, Ill.



*January 8.*

- 532135. Lens Measuring Instrument. R. H. Biegel, Denver, Col.
- 532173. Printing Photographs on Textile Fabrics. R. Martin, St. Paul, Minn.
- 532326. Camera Diaphragm. M. Levy, Philadelphia, Pa.
- 532327. Photographic-Lens-Tube-Diaphragm. M. Levy, Philadelphia, Pa.
- 532398. Photographic Objective. P. Rudolph, Jena, Germany.

*January 15.*

- 532517. Tripod. R. Aucock, Utica, N. Y.
- 532571. Photograph Holder. E. Lund and J. Kullberg, Minneapolis, Minn.
- 532639. Photographic Flash Light Machine. C. and F. Clifford, Muscatine, Iowa.

*January 22.*

- 532751. Film Holder. N. G. Bartlett and E. E. Edgerton, Chicago, Ill.
- 532775. Photographic Print Washer. J. W. C. Floyd, Lock Haven, Pa.
- 532797. Flash Light Device. T. H. McDonald, Bridgeport, Conn.
- 532844. Background Support. W. Trueman, Brooklyn, N. Y.

*January 29.*

- 533125. Folding Picture Frame. H. R. Hinckley, Waterbury, Conn.
- 533322. Process of Making Negatives. J. Stanton, Baldwinsville, N. Y.
- 533325. Combined Telescope, Microscope and Camera. R. L. Stevens, Ward, Pa.

*February 5.*

- 533437. Combined Album and Bible. G. Clay, Philadelphia, Pa.
- 533618. Roll Holding Camera. C. H. Stoelting, Chicago, Ill.
- 533752. Photographic Print Holder, H. A. Stimson and C. J. Isaacson, South Superior, Wis.

*February 12.*

- 534115. Magazine Camera. A. Lundelius, Port Jarvis, N. Y.

*February 19.*

- 534337. Photographic Shutter. F. J. Mathein, New Haven, Conn.
- 534440. Photographic Shutter. F. H. Kelley, Boston, Mass.
- 534583. Apparatus for Projecting Images on to Distant Bodies. R. A. Scott, Acton, England,

*February 26.*

- 534912. Tripod or Camera Support. E. W. Perry, Jr., New York, N. Y.

*March 19.*

- 535850. Photographic Curtain Shutter. W. Oehmke, Berlin, Germany.
- 535897. Lens for Optical Purposes. C. P. Goerz and E. Von Höegh, Wilmersdorf, Germany.

*March 26.*

- 536178. Photographic Roll Holder. E. B. Barker, Newark, N. J.
- 536242. Photographic Shutter, A. G. Tisdell, Scranton, Pa.
- 536253. Photographic Shutter. W. I. Adams, Montclair, N. J.
- 536276. Flash Light Mechanism. E. D. Evans, Ithaca, F. Y.
- 536291. Photographic Retoucher. A. E. Peck, Minneapolis, Minn.
- 536514. Magazine Camera. M. C. G. de Girandy, Marseilles, France.
- 536569. Phantoscope. F. Jenkins, Richmond, Ind.

*April 2.*

- 536592. Panoramic Cabinet. A. A. Agüero, New York, N. Y.

536790. Flash Light Apparatus. G. T. Shiras, Allegheny, Pa.

536820. Magazine Camera. W. D. Robinson, Philadelphia, Pa.

*April 16.*

537442. Machine for Embossing Photographs C. J. Dorticus, Newton, N. J.

537797. Photographic Camera. E. B. Barker, Newark, N. J.

*Trade Mark 26418.* Photographic Paper (Glorio) G. D. Milburn, Rochester, N. Y.

*April 23.*

537916. Photographic Shutter. F. A. Brownell, Rochester, N. Y.

537968. Photographic Print Washer. C. J. Dorticus, Newton, N. J.

538182. Achromatic Dispersing Lens, for Lens Systems, etc. P. Rudolph, Jena, Germany.

## SECOND NATIONAL PICTORIAL PHOTOGRAPHIC COMPETITION, 1895.

### CONDITIONS.

Only competitors residing in either the North or South American Continents will be eligible to enter this competition.

Every competitor shall send in four prints.

The pictures submitted must be exposed, developed and printed by each competitor without assistance.

At the close of the competition the mounted prints will be sent to London, England, and judged there by two acknowledged leaders of pictorial photography. Their verdict will be final.

Each competitor is required to pay the AMERICAN AMATEUR PHOTOGRAPHER an entrance fee of five dollars at the time the prints are sent, the aggregate amount, after the deduction of expressage expenses to and from England, to be used in the purchase of three prizes of silverware, appropriately inscribed; fifty, thirty and twenty per cent. to go to the first, second and third prizes, respectively.

In case only two prizes are awarded, the division to be sixty and forty per cent. ; if only one prize, the winner to get all.

After the judging is completed and the prizes are awarded, all the pictures will be returned to this country and the collection exhibited, from time to time, in the principal cities of the United States, and finally returned to the contributors.

In case there should be less than six entries the competition will be declared void, and the entrance fee and submitted photographs will be returned to the senders at their expense.

In case the pictures submitted are regarded by the judges as below the required standard the pictures and entrance fee will be returned, less the *pro rata* cost of transportation.

No entry forms are required, but competitors must send a list of prints, each to be marked on the back with an assumed name or symbol, and numbered, the list to be enclosed in a sealed envelope bearing on one corner the same name or symbol that is put on the prints.

The prints must be mounted, the package addressed and sent prepaid to "American Amateur Photographer Pictorial Competition," 239 Fifth avenue, New York.

All entries must be in by October 15, 1895.

*"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 296, Vol. VII.*

under ordinary circumstances a gas, and mixed with nitrogen, constitutes the air we breathe. In combination with hydrogen it forms water. In the pure state it is a colorless, inodorous gas, in which inflammable bodies, such as wood, oil, sulphur, etc. burn with much more rapidity than in common air. It enters into the composition of all animal and vegetable tissue and about half the weight of the solid earth.

**OXYHYDROGEN AND OXYCALCIUM LIGHT—DRUMMOND'S LIGHT**—These lights are so much alike, that it will suffice to give a general description. A cylinder or stick of lime is placed in the focus of a parabolic reflector and a lighted jet of oxygen or coal gas is directed upon it. The lime burns with an intense flame, and it is said that it can be seen at a distance of sixty miles in hazy weather, and one hundred miles in clear weather. The oxycalcium differs from the former in that the flame of a spirit lamp is used instead of hydrogen gas, the oxygen being thrown upon the flame. In the preparation of oxygen for this purpose, it is necessary that the chemicals used in its production should be pure. But it can now be procured pure, all ready for use, in stout steel cylinders, charged with from 10 to 120 atmospheres, in most of the cities. There are three forms of jet for the lime light. The oxycalcium, blow through or safety and the mixed jet. The simplest of all is the first. It consists of a spirit lamp, the alcohol furnishing the necessary hydrogen, and through its flame a jet of oxygen is passed and impinges upon a cylinder of lime placed just at the other side of the wick. For further and full particulars the reader is referred to Chadwick's Magic Lantern Manual or Hepworth's Book of the Lantern.

**OZKERITE, American or Natural Paraffine Wax**—Large deposits of this have been found in the Wasatch mountains, 113 miles east of Salt Lake City. Said to be the only mines of this mineral known to exist outside Galicia, Austria, whence the entire world's supply until recently has been obtained. The uses of this mineral are constantly enlarging, and in this country alone the consumption amounts to 500 tons yearly. Its chief uses in the crude state are in the manufacture of waxed paper, in lining of wooden vessels, varnish and blacking, and in the insulating of electrical wires. The American product is said to differ from the Austrian article, in that it does not need refining, but comes direct from the mine ready to be melted and applied, whilst the Austrian product must be refined in order to be applied to its numerous uses.

## P

**PACIFIC COAST, Photographing of**—Every one who has tried his hand at sketching a shore point from the deck of a vessel approaching the shore, or in

passing, knows how difficult the task is, owing to the ever changing phases presented by the sunlight. Prof. Davidson, of the Coast Survey, has planned a scheme for photographing the whole line of the Pacific seaboard, from selected stations, say at distances of 10 and 20 miles broad, off shore. The further ones would give the landfall or crestline of the coast mountains, as it would appear to the navigator approaching the coast directly from seaward. The inner line of stations would give the details to steamships and sailing vessels coasting northward and southward.

**PACKING PLATES**—Various devices are employed by the makers to preserve dry plates from accidental injury and breakage in transit. I have found that what are called telescopic boxes, three being needed, the best for long and rough trips, the plates separated from each other by absolutely pure tissue paper. Six plates being thus kept apart are then carefully wrapped in non-actinic paper—the black needle paper being preferable—the ends neatly folded down. Additional 6 plates are treated in the same way, and the two packages thus formed wrapped first in waxed paper and then in stout manilla and forced into the boxes and properly secured—thus treated they will stand pretty hard usage. When traveling abroad, in order to pass the Custom House officers, it is well to have labels in different languages, setting forth the nature of the contents of the packages.

**PAINT FOR BRIGHT METALLIC SURFACES**—Mix whiting with spirits of turpentine to a convenient consistency and add enough lampblack to give it color. This compound dries with perfectly mat surface, and can be easily wiped off with a dry cloth after the subject has been photographed.

**PAINTINGS, COPYING**—See Copying and Hints on Copying.

**PAINTINGS, PREPARING FOR REPRODUCTION**—When very old paintings have been hung for a long time exposed and subjected to dust, moisture and other damaging influences, the surface of the painting is so much incrustated with dirt as to make a good copy from it an impossibility. Under these circumstances the picture should, if practicable, be cleaned with a soft sponge, water and soap, and after allowing it to dry, rubbed over with a dry, soft rag and then with oil or glycerine and water. The most favorable illumination for oil paintings is a direct front light, by which shadows cast from very thick strata of paint and strong brush marks are considerably allayed, and the structure of the canvas is made invisible. Black or neutral screens placed at certain angles towards the object to be copied

will absorb the objectionable light, and leave the original free from reflections. Gloss and flares may cause disturbance, but these may be overcome by placing reflecting mirrors behind the lamp and by adjusting one horizontally directly under the picture.

**PALLADIUM, Pd. = 106.2**—Found crude in nature. When the solution of crude palladium from which the greater part of the metal has been precipitated by sal ammoniac is neutralized by sodium carbonate and mixed with a solution of mercuric cyanide, palladium cyanide separates in a white insoluble substance, which, on being washed, dried, and heated to redness, yields metallic palladium in a spongy state. It may then be welded into mass in the same manner as platinum, which it closely resembles in color and appearance. It is also very malleable and ductile. Its density differs very much from platinum, being only 11.4. Nitric acid attacks it slowly. Its best solvent is nitro-muriatic acid. On account of its unalterability in air and its bright silver white color, which is not affected by exposure to sulphureted hydrogen, it is used for preparing the graduated surfaces of astronomical instruments and for coating silver goods. In the form of chloride it has been recommended for toning transparencies and enamels.

**PANEL**—A photographic mount measuring 4 x 8¼ inches.

**PANORAMIC PHOTOGRAPHY**—Two forms of cameras for this purpose were at one period manufactured, but owing to the difficulty and consequent expense incurred in their production, they have long ceased to be made. In one the camera was mounted on a pivot, and the lens directed in succession to every point on a horizontal plane of the view that is to be taken, provision being taken to shut out from the sight of the lens all of the sensitive plate except a narrow strip exposed behind a slit, the plate being made to pass with a steady motion behind it, while the camera is being rotated on the stand, the other form being one in which the lens is an absolutely spherical globe, formed of a glass shell, the interior being filled with water. With such a lens it is evident that every ray that is transmitted will be axial, as all are transmitted under like conditions. But in such a case the plate on which the negative is to be produced would have to be bent in a cylindrical form, the radius of its curvature being equal to the focus of the lens. Some very ingenious cameras carrying a regular battery of lenses have been introduced lately in France. But very fair panoramic pictures can be produced by rotating the camera, and especially with the celluloid roll films, if the operator will not take too great pains to join and match exactly the prints—a common and always unsuccessful attempt. To ob-

tain a more pleasant and realistic effect, mount the prints about one-eighth inch apart, and minute differences in tone or vigor are not so readily observed.

**PAPER, ALBUMENIZED**—See albumenized paper.

**PAPER NEGATIVES**—The introduction of paper coated with sensitized gelatine was not a new invention when introduced a few years ago. Twenty years before, Baldus made experiments with paper prepared with iodized gelatine. This was slow. In 1873 Maudsley had already proposed the use of bromized paper, but, notwithstanding his advice, the experiments made with it were unsuccessful, his formulæ and especially the mode of preparation, being still defective. About 1880, Morgan in England, and 1883, Eastman, in this country, had good success in the manufacturing of this paper.

See a previous article.

**PAPER, PLAIN**—or matt surface. See sensitized paper.

**PAPER PARCHMENT**—its manufacture.—Dilute strong sulphuric acid with half its volume of water and allow it to cool to about 65° F. Then immerse unsized paper in the cold acid from ten to fifty seconds, according to its thickness. The paper is then washed well in cold running water and finally dried.

**PAPER, SENSITIZED**—See sensitized paper.

**PAPYROTYPÉ**—Lithography in half-tone, paper being used instead of stone or metal as a support. See Husband's process.

**PARABOLA**—Is a curve, any point of which is equally distant from a fixed point called the focus and a fixed straight line called the directrix. A curve—one of the conic sections formed by the intersection of the surface of a cone with a plane parallel to one of its sides; chiefly used in photography in construction of mirrors or reflectors for artificial light. The rays of a luminous body placed in the focus of a parabolic mirror will be reflected in parallel rays, and the light thus reflected tends to maintain its intensity even at a great distance.

**PARAFFIN**—Solid paraffin is a colorless, crystalline, fatty substance, probably consisting of a mixture of several of the higher members of the series  $C_n H_{2n+2}$ . When heated for some time in a sealed tube, it is resolved,

with little or no evolution of gas, into a mixture of olefines and paraffines of lower molecular weight, which remain liquid at ordinary temperatures. It is found native in the coal measures and other bituminous strata, constituting the mineral known as native wax—ozokenta, which see—hatchettin, etc. It exists also in the state of solution in many kinds of petroleum, and may be separated by distilling off the more volatile portions and exposing the remainder to a low temperature. In a similar manner, also, may solid paraffin be obtained from the tar of wood, coal and bituminous shale. It is tasteless, inodorous, insoluble in water, slightly soluble in alcohol, freely in ether, and miscible in all proportions when melted, with fixed or volatile oils. The paraffin series are largely used, under various names, in lamps; used extensively in photography, in the form of waxed paper and in rendering trays watertight.

**PARALLEL RAYS**—Those rays proceeding from distant objects, as the sun for instance. Rays from objects near the lens are diverging rays, and this divergence becomes greater the nearer the object. The focus formed from parallel rays—the principal focus—is always the same, but the focus for objects near at hand constantly varies, being longer as the object is brought closer to the lens. Hence the construction of the camera box—that it may be lengthened or shortened.

**PARALLECTIC ERROR**—A serious obstacle connected with large apertures, giving an indefinite number of images, none equal to the other, every one overlapping the other, and the image necessarily must be a blurred one. No remedy for this fault but cutting down the aperture.

**PARA PHENYLENEDIAMINE**  $C_6H_4$  } —Patented in Germany, Aug. 1, 1888, by  
**PARA TOLYLENEDIAMINE**  $C_6H_3$  }

Dr. M. Andersen. Consists in the application of dilute, aqueous, weakly alkaline solution of the above for the development of photographic pictures in film containing silver haloid. The inventor claims for these developers great cleanness and eminent gradations of tone, not only in the high lights, but particularly in the middle tones and shadows. Further, in consequence of the peculiar dense structure of the silver deposit, they have excellent printing qualifications. That this ready-mixed developer shows only a slight discoloration after several weeks' exposure to the air. The claims of the inventor have been taken to task by several able men and pronounced by some to be fallacious.

**PASTE**—See mountants.

**PASTE, ENCAUSTIC**—See encaustic paste.

**PATCHES AND STAINS, ON PRINTS, YELLOW**—These are caused by careless manipulations, such as finger marks upon the surface of the paper. Washing the prints in imperfectly cleaned dishes or in the tank that received the prints from the hypo the day before; hypo on the fingers while toning. If there is the least trace of silver in the tank when it receives the prints from the hypo, they will all be stained and *vice versa*. If there is the smallest amount of hypo in the water while washing the silver out of the prints they will be stained. Hence keep the dishes and hands perfectly clean if these faults are to be avoided.

**PEARLASH**—The crude potash of commerce, procured by the process called lixiation, from ashes. The salt is very impure, containing potassium, silicate, sulphate, chloride, etc. See potassium carbonate.

**PELLET'S PROCESS**—Blue positives. Sensitizing solution oxalic acid, 5 grains; iron perchloride, 10 grains; water, 100 c. c. Developing solution potassium ferrocyanide,  $3\frac{1}{2}$  ozs.; water, 20 ozs. Clearing bath, hydrochloric acid, 2 ozs.; water, 1 pint.

**PELLICLE**—A thin film or skin. The dried emulsion after its solvent has been evaporated. These films were introduced many years ago, and in which gelatine was first used in photography. Pellicular papers have been used since 1881 in the establishment of Messrs. Lumière, Paris, for clichés in general and notably phototypy.

**PENCIL OF LIGHT**—An aggregation or collection of luminous rays. It is said to be parallel when it is composed of parallel rays, as from distant objects, divergent when the rays separate from each other, which is the case when the object is near, and convergent when they tend towards the same point.

**PERSPECTIVE**—Defined to be the art of making such a representation of an object upon a plane surface as shall present precisely the same appearance as the object itself would present to the eye situated at a particular point. As an art perspective is divided into two great parts, linear perspective, which treats the subject from a purely mathematical standpoint, and aerial perspective, which is used to designate the changes made in the appearance of objects by the interposition of the atmosphere and the relation of the lights and shades as influenced by distance, etc. The subdivisions are known as angular perspective—which see—and violent perspective, *i. e.*, when objects are commenced too near the eye, they appear to be out of proportion with the other objects in the work; and although according to rule, they appear false in effect to the eye. To avoid this a point of dis-



tance is chosen that will look agreeable. There are many excellent manuals in which this subject is ably treated, and which should be well studied by all.

**PETROLEUM**—Rock oil. A liquid inflammable, bituminous substance extending from the earth and collected on the surface of the water in wells and fountains in various parts of the world, or oozing from cavities in rocks. It is essentially composed of carbon and hydrogen.

**PETROLEUM ETHER**—The terms petroleum ether and rhigolene have been used by some authorities to denote the same thing. The petroleum ether of to-day is a heavier petroleum product, which has been purified by the complete removal of water and resinous matters. It is slightly heavier than gasoline, and its great superiority for lime light purposes appears to result from the removal of the water, which is present in considerable quantities in gasoline and benzine.

**PHOSPHORESCENCE**—A property which a large number of substances possess of emitting a feeble luminosity when placed under certain conditions. The various phenomena may be referred to five causes: Spontaneous in certain vegetables and animals; by elevation of temperature; by mechanical effects; by electricity or by insulation or exposure to the sun. Certain bodies having been exposed to the action of sunlight or the diffused light of the atmosphere, emit in darkness phosphorescence, the intensity of which depends on the nature and physical condition of their substances.

**PHOSPHORESCENT PHOTOGRAPHS**—In the phenomena of phosphorescence there are no chemical changes, but the substance absorbs the energy of the calorific and luminous vibrations, which it radiates afterwards as heat and light in attenuated form, but sometimes still capable of impressing the silver salts. Therefore, if a layer of such a substance be exposed under a transparency to the action of the sun's light, or to that emitted by incandescent magnesium, it will radiate light from the part acted upon to the exclusion of others, and consequently a phosphorescent photographic image will be produced, which of course can be seen only in the dark. Amongst the substances which possess this property will be found the sulphides of strontium, calcium and barium. The phosphorescent light, its intensity and duration, is not the same with every substance, and even varies according to the mode of preparation of the substance itself and the manner it is impressed. The temperature of the substance has also a great influence on the phosphorescent phenomenon. Generally, at common temperatures, the light is green or blue, but becomes yellow at 212° F. The duration of the light of sulphides of barium, calcium and

*To be continued.*

# Cloud.... Photography

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[This department is for the benefit of SUBSCRIBERS who have photographic material, apparatus or books which they wish to exchange, and such wants will be inserted free of charge one time. For each additional insertion we will charge one dollar per month. Dealers advertising in these columns will be charged double our ordinary advertising rates.]

The undersigned will purchase at reasonable prices original negatives, or copies of same not heretofore published, of still life, landscape, marine and other original and unique subjects of living figures and groups. Send copies, with price, to C. W. Grosch, 200 West 123d St., N. Y. City. Subjects not accepted will be returned in good condition, unused.

*For Sale*—A genuine and unusually fine Darlot  $\frac{1}{2}$  size Quick-Working Portrait Lens with Central Stops. Excellent for quick portraits in the house. Excellent as a lantern-objective. Good as new. Regular price \$22.00; will sell for \$15.00 net cash. Correspondence solicited. Address, "J. D.," P. O. Box 1522, Boston, Mass.

*For Sale or Exchange*—A Zentmayer Centennial Binocular Microscope, in first-class condition; 5 eye pieces, Zeiss condenser. Wanted a first-class 5x7 or 6 $\frac{1}{2}$ x8 $\frac{1}{4}$  modern new camera, with B. & L. shutter and Zeiss lens; or will sell cheap. Lock Box 1017, Decorah, Ia.

*For Sale*—A genuine and specially fine No. 3 Darlot's Rapid Hemispherical lens for 6 $\frac{1}{2}$ x8 $\frac{1}{2}$  plate. Splendid for instantaneous portraits, views, etc. Will cover 8x10 sharp to corners, with small stop. Price, \$30.00. *Is brand new.* For cash, \$22.50. J. D., Box 1522, Boston, Mass.

*For Sale*—4x5 Optimus R. R. Lense, fitted with Prosch Shutter, in perfect condition. Price, \$18.00. Address, E. G. Tremaine, 164 State St., Brooklyn, N. Y.

*For Sale*—One Entrikin Eureka Burnisher, inch roller, and 1 paper cutter, 6 inch, both as good as new John E. Davis, Butte, Mont.

*For Sale*—I have 4x5 Blair Camera B. & L. shutter, 2 lenses, 12 plate holders and developing outfit for sale cheap for cash. Also No. 3 Kodak. Walter Kimbark, 80 Michigan Ave., Chicago.

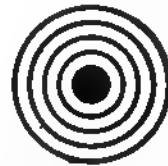
Amateurs who intend to contribute to the exhibitions should use Willis & Clements' new Rough Surface Cold Bath Platinotype Paper. Nothing has ever approached it for art effects. See ad. on page xv. Yours very truly, Willis & Clements.

*For Sale*—The following lenses, all new: Beck R. R., No. 5, 8x10 Iris, \$50; Ross W. A., No. 5, 10x12, \$32; Ross Rap. Sym., 9 in., 5x8, Aluminum, with Bauch & Lomb Shutter Aluminum, \$46; Swift Rap. Paragon, 5x8, with Bauch & Lomb Shutter, \$39; Morrison W. A., No. 4, 5 in., 5x8, \$9; Busch Pantascope No. 2, Extreme W. A., List \$30, at \$15; Gray Landscape, No. 3, 6 $\frac{1}{2}$ x8 $\frac{1}{2}$ , \$6; French W. A., 5x8 (Importer's Name), List \$20, at \$12; French Single, 6 $\frac{1}{2}$ x8 $\frac{1}{2}$ , \$5; Beck W. A., No. 2, 5x7, \$22.50. W. H. Gray, 521 Forest Ave., Oak Park, Ill.

*For Sale*—A Ross Universal Extra Rapid Lens, 10x12, and Columbian triplex shutter. List price, \$139.50; will sell for \$100. Also a 4x5 C daylight Kodak, with plate attachment, 3 extra plate holders and roll holders. List price, \$33.00; will sell for \$18.00. Address, Albert Burnton & Co., 49 Sixth Ave., New York City.

*For Sale*—The Platinotype Company's electric light, solar, contact and art business. Will be sold outright or worked on shares. Here is a chance for some one to step right in and commence business. Address, Willis & Clements, 1624 Chestnut St., Philadelphia, Pa.

*For Sale*—A Blair Camera Co. Pet-ite Kamaret and roll of film. Best cash offer takes it. Address, H. Lock, Box 534, Canton, Ill.



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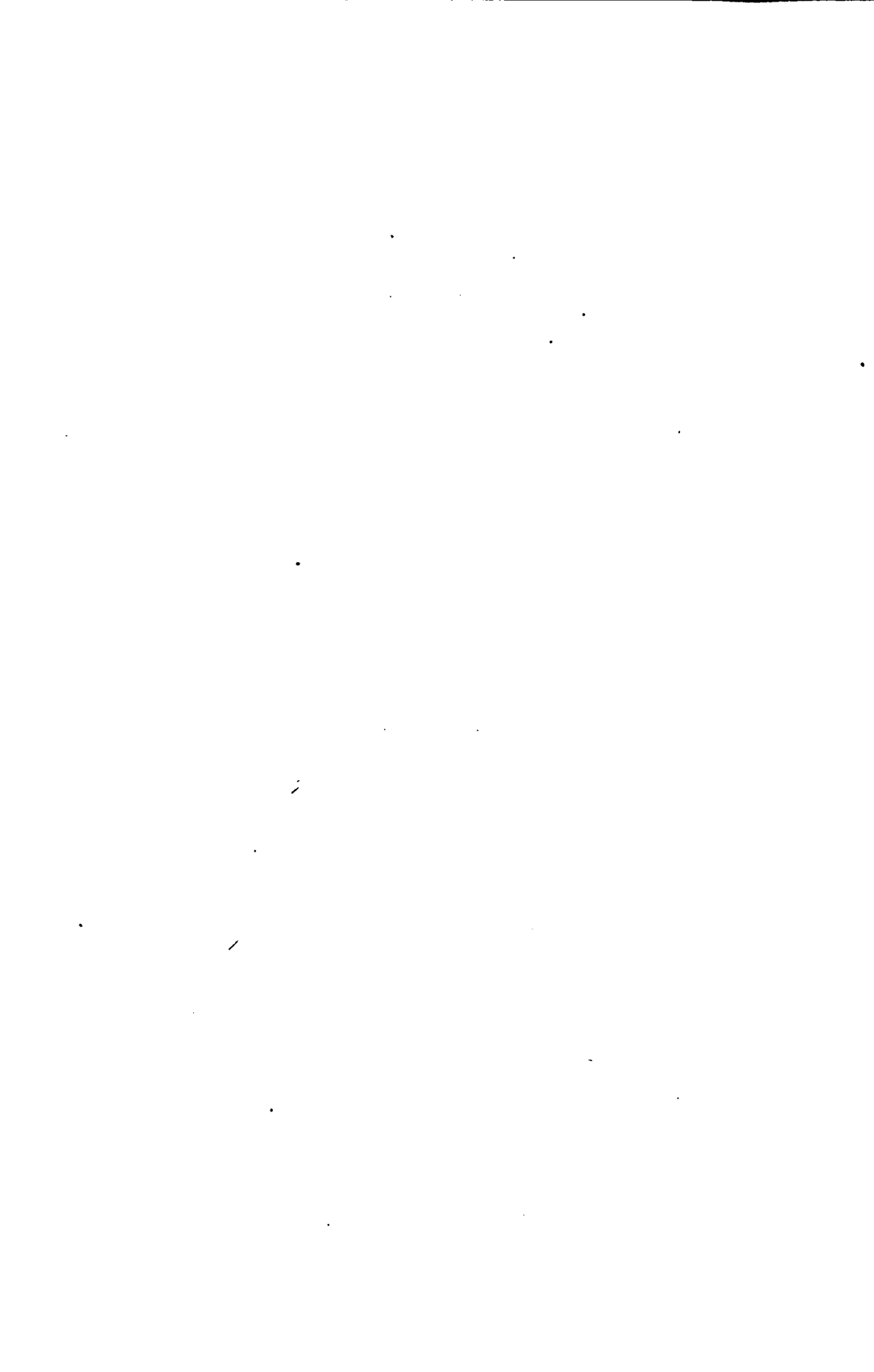
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American Agents for Sprange's BLUE BOOK for AMATEUR PHOTOG-  
RAPHERS (the New Photo. Directory), for 1894.



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By KARL GREGG

"A WELSH COTTAGE."

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Independence in Photography.

BY MAX MADDER.

THE most successful amateur photographers of to-day are undoubtedly those who have freed themselves from all bonds of conventionality and struck out along original paths, displaying not only artistic taste, but individuality, in their work.

Until the photographer learns to be independent he can never hope to succeed.

Unfortunately, there are born in this world—every day—many thousands of poor, puny creatures, utterly devoid of original ideas, who all their lives are contented to follow in the beaten track of those who have preceded them. Learn to be independent.

First master the mechanical part of the photographic art, by following instructions laid down if you like, but after this learn to think for yourself.

How few do this!

Take, for instance, the question of sizes. In the construction of cameras it is, of course, desirable to have certain standard sizes, but it does not follow that the pictures produced by these means should also be of the same dimensions. Yet they nearly always are. The ordinary amateur who owns, say a 4 x 5 camera, will continue to make photographs about 3½ x 4½ all his life, giving no thought at all to the pictures themselves—he would consider it almost a crime to trim his photograph down to, say 1 x 3 inches, yet by so doing he might convert his photograph into a picture. The economical ones will say: "But think of the waste." Waste be —. I mean such a consideration should not be thought of. If the photographer be an artist he will sacrifice everything to obtain



the result he is aiming at. It is an easy thing to make photographs ; any fool can do that, and there are too many doing it, unfortunately ; but to produce by the aid of the camera a result to which we are at once attracted, as a picture requires care, brains and artistic feeling.

How few possess these !

The amateur, when he first makes up his mind to go in for photography, usually finds his way to the nearest stock dealer and listens attentively to the words of wisdom imparted by the store clerk. As a rule these men are as ignorant about pure photography as it is possible to imagine. Their unfortunate victim listens with wrapt attention, and is easily convinced that if he desires to succeed his only hope lies in purchasing one of So and So's cameras fitted with a lot of useless appliances that never were and never will be of any use. He purchases a

"WAITING."

By Anachneta.

whole quantity of material, a 4 x 5 camera, 4 x 5 plates, 4 x 5 paper, 4 x 5 frames, 4 x 5 trimmers, and 4 x 5 albums and mounts. He goes on his way rejoicing, and if he doesn't get tired of photography in a week or so, he joins the large army of amateurs, inflicting his terrible productions upon his unfortunate friends and relations. He is only happy when he is showing his horrible results to some poor individual who is too polite to beg of him to desist. He explains in detail the reason why each photograph was not what may be termed an entire success.

This plate was fogged because his mother-in-law insisted upon opening the dark room door while he was developing. Another awful looking thing is explained by the fact that "the plate was bad." Poor unfortunate plate-makers, what a lot of failures ye have to answer for!

Why should I proceed further? Every one is acquainted with one

By H. P. Robinson.

"THE GOSSIPS."

or more of these misguided individuals. Perhaps you will say that if photography practised in this manner gives them pleasure, why not let them continue—we find few enough pleasures in this world?

True enough, but if a thing is worth doing is it not worth doing well? And how much greater the pleasure that would be derived from the satisfaction that one has succeeded in doing more than the mere taking of ordinary, everyday, commonplace photographs!

Be independent, study the work of the best photographic artists, and then use your own brains. Work with some high aim. Expose, if you must, a thousand plates, and if you succeed in obtaining what you want with one, destroy the other nine hundred and ninety-nine. They are of no use, so it is not a waste. After a time you will learn to so control your camera as to be able to obtain the results you desire without any considerable waste.

Take time and think before you act The greatest fault displayed by the majority of photographers is in reckless exposure. They snap off the shutter anywhere and anyhow, relying to chance for the result. A little thought and consideration would soon convince them of their foolishness, and so save all the trouble of developing to find out what their own senses would have told them.

One cannot deny that there is a terrible sameness about the average amateur's productions. One of the reasons is that he makes too many photographs. Each picture should be studied carefully and the best treatment accorded to it. It may take as long to finish one properly as to make a dozen in the usual way, but quality, not quantity, should be aimed at. Let us imagine, for instance, that you have taken a walk out into the country and found the makings of a picture. Study it well, find out where the best effects of light and shade are attainable, and then arrange to bring your camera. Spend an hour if you like in arranging the objects on the ground glass. Above all do not attempt to crowd in the whole of the country into the one picture. When you have arranged the objects on the focussing screen to your satisfaction, find out the effects obtainable with the different stops. Use the largest aperture you conveniently can, so as not to have the picture too flat and wanting in aerial perspective. Try the effect of diffusing the foci of the various planes. Try to make a picture, using the camera and lens as tools, making them obey your own will; you will then find a new pleasure in photography, you will feel at least that to your own self belongs the chief credit of the finished result and not to the camera. Make your exposure when you are satisfied with the image on the screen, and in developing do not pour on the solution without care or thought, as so many do. Work with your solutions having in view the result you are aiming at.

When the negative is complete, study it well. Make a rough proof upon any kind of paper and carefully consider the best method of finishing it. With a few sheets of plain paper cover up different parts and try to find the best shape to trim the picture to. This having been done, you need only print from that portion and so save further waste.

Do not imagine that a glossy aristo paper will give the best result. Try a matt surface one. Make a platinotype first on plain and rough-surfaced papers. Some subjects are best when printed on a very rough paper. The platinotype process is not a difficult one to master, as so many appear to imagine, and it certainly gives the most pleasing and artistic results.

Many photographers would be surprised at the different effects they could produce from some of their negatives if printed upon a rough surface black or sepia platinum.

In mounting and framing use the same amount of care and thought, and in the end you will be satisfied that instead of making a lot of photographs that are devoid of interest or artistic merit, you have a picture that you can be proud of. Remember the words of Keats:

"A thing of beauty is a joy forever. Its loveliness increases; it will never pass into nothingness."

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**Interiors.**—When taking interiors it is very often difficult to see on the ground glass how much of the ceiling of the structure is in the picture. A good method is to take a small mirror, one of the tin backed ones you buy for a copper or two will do, and place it against the ground-glass at an angle of about 45°. If you look on the surface of the mirror you will find the top of the building reflected as plainly as the rest.—*Photographic Record*,

By John G. Bullock.

"WESTWARD, AS FAR AS EYE CAN SEE."

## Photographing Interiors.

BY DR. HUGO ERICHSEN.

OW that fall is come and winter nigh, amateurs should turn their attention to one of the most fascinating branches of photography, the photographing of interiors. In the short days and long evenings that are before us, indoor photography takes precedence over outdoor photography. During this time, when our out-of-door operations are limited to snow scenes and frost-bound landscapes, many souvenirs of our homes may be secured that will prove invaluable when some accident of life removes us from them. Now is the time to perpetuate the memory of our familiar little nooks and corners by means of the art-sci-

ence. What would you not give to have some photographs of your childhood home, or the apartments of the dear old house that burned down and can never more be restored, except in imagination? Do not, therefore, neglect an opportunity to take photographs of every part of your home that you cherish.

In order to succeed in taking interiors, a perfectly rectilinear wide-angle lens is desirable, although not absolutely indispensable. Many amateurs will be confined to the use of their rapid rectilinear or single view lenses, and, with due care, may be fairly successful; but the best results are obtained with a wide-angle lens. The view of the dining room, at the head of this article, was taken with an achromatic single view lens, and is a good example of what may be done with simple apparatus if proper precautions are taken. A square camera is preferable to one with conical bellows; whenever the latter kind is used it should be slightly larger than the plate; a 5 x 8 camera, for instance, will do very well for a 5 x 7 picture. The camera should be provided with a sliding front and a swing-back, as upon these will depend, to a great extent, the obviation of a bane of interior photography, the tilting inward or outward of straight lines at the top. Halation, which was another drawback to the practice of interior photography, has been done

"A SUMMER AFTERNOON."

By A. L. KIDWELL.

away with by the invention of non-halation plates. Ordinary plates may be provided with a non-actinic backing, but as non-halation plates are not much more expensive than ordinary ones, there is no good reason why the latter should be used in preference to the former, which give no trouble to the amateur.

In interiors much depends upon the point of view from which the picture is taken. Sometimes there is no choice, as was the case with the photograph which heads this modest essay. Necessity compelled me to take it at an extreme angle from an adjoining room. There was a door directly opposite the side-board, but if the room had been photographed from that position some of the principal features of the apartment would have been excluded; the deer's head, for instance, that lends an additional charm to the room, would have been obscured by the gas-globe to the left, which was in a direct line of vision. The door to the left, which is too prominent altogether, could not be excluded; in fact, the room had to be taken as it was or not at all. By a reference to the illustration it will be seen that the lighting of "A Glimpse of the Dining-Room" was from the top, from the direction in which the light usually falls after the gas is lit. This gives a natural look to the room. It is easily accomplished; a magnesium powder cartridge on top of a step-ladder will do the work.

After the best point of view has been found, the proper arrangement of the contents of the room must be seen to. Generally it is best not to move the furniture about too much and to put everything in apple-pie order; it will rob the room of its familiar appearance, which is its principal charm. A little disorderliness oftentimes increases the picturesqueness of the photograph. Much depends, of course, upon the innate tact and taste of the amateur, who must be possessed of the artistic sense in order to secure the best results.

If possible, interiors should be lighted from the side and rear, or, if practicable, from the top. Windows sometimes cannot be avoided; some rooms contain more windows than wall space. If a window is included in the picture, the best thing that can be done is to close the shutters tightly, pull down the shade and take the room by the aid of light from the side or the rear. Then, when a sufficient exposure has been given, the window may be opened for a few seconds and in that way a satisfactory image of it obtained. Some do not bother with the window during exposure, but restrain its development by means of a solution of bromide of potassium, applied with a camel's hair pencil after sufficient detail has been obtained, or reduce it with Farmer's solution in the finished negative. For my part, I prefer to take such a view by flashlight. In no other way could the details of the lace curtain in "A Glimpse of the

Dining-Room " have been obtained. I have never used a flashlight lamp, but generally have recourse to the magnesium powder cartridges already referred to. I lengthen the fuse of these by attaching a piece of twisted paper thereto, which, when ignited, burns slowly and enables me to retire to a safe distance before the explosion takes place. Magnesium powder is objectionable on account of the smoke and dust that result from its explosion. I understand that a flashlight lamp has been invented recently that removes these objections, which would greatly facilitate interior photography and render flashlight more popular than ever. Whenever flashlight is employed for interior photography, the lens should be screened from it. Care should also be taken in lighting it, or burned hands and fingers will be the consequence. The flash of the powder is blinding, hence the face should be averted during its explosion. Some authorities advocate a double flashlight. It is true that a softer effect may be obtained in this manner, but at the expense of a proper distribution of light and shade. It seems to me that the shadows should correspond to the source of light.

When interiors are taken in the daytime, diffused light is preferable to sunlight. Generally, however, daylight is insufficient for photographing interiors, and the amateur can be spared much time and trouble by the use of magnesium powder. I have exposed plates for hours in ill-lighted rooms, and yet, on development, found them to be underexposed. With flashlight there is no danger of this, and one need not "prowl around the camera for hours to keep intruders away," as Octave Thanet says.

The reflection from picture glass is apt to give one trouble unless the angle of the picture is changed by placing a small wad of paper behind it or coating its surface with starch. Sometimes the picture will have to be removed and something else put in its place before a good photograph can be secured.

I generally focus with a large stop and then insert the smallest I have; in this manner I secure the detail that is indispensable in an interior.

Whenever figures are introduced in an interior they should apparently be occupied in some way, as for instance, reading, sewing, playing the piano or twanging the strings of a guitar; under no circumstances should they be made to look out of the picture and toward the camera.

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THE September number of *Godey's Magazine* contains a beautifully illustrated article on "Recent Amateur Photography," by Mr. F. W. Crane. *Godey's Magazine* has come to be one of the most popular cheap magazines, and is particular to have good illustrations, made from original drawings.



## English Notes.

BY GEORGE DAVISON.

**Photographic Convention of the United Kingdom.** — The convention this year has been held from the 15th to the 20th of July, at the town of Shrewsbury. This is, I think, the tenth annual gathering, and the papers read and the outdoor sociable excursions organized seem to have been as successful as on any previous occasion. The President, Mr. A. Haddon, in his opening address, took as his subject the advances made in branches of science more or less associated with photography. In a very interesting resume he alluded to advances in connection with the production and uses of aluminum, Mr. Willson's discoveries regarding the production of acetylene, Prof. Dewar's experiments regarding chemical combinations at low temperature, the Lippmann Lumiere color photography, half-tone process and the fish glue method now so generally adopted therein; the use of the ruled screen in photogravure making, copper plate intaglio, photo-etchings available for steam printing, Dr. Joly's method of producing transparencies in natural colors, photo-enamelling, the speed of plates and the new Pentane standard light, the discovery of argon and helium, and the important improvements made in the manufacture of lenses.

An exhibition of photographs by local members and a show of apparatus added to the interest of the gathering.

**TONING AND FIXING BATHS**—Mr. Bothamley's paper at the Convention dealt with this subject, and in it he gave the conclusions he has arrived at, based on his recent experiments. In cases of sulphur toning, in an acid solution of hyposulphite of soda, or in one containing alum, he finds that fixing and toning do not go on together, but that the fixing takes place first and the toning goes on afterwards. With the addition of lead salts to the hypo. the same sequence takes place—fixing first and toning afterwards, and the color is indistinguishable from that produced by gold toning. Further, the prints retain sufficient lead, even after very prolonged washing, to cause discoloration in time. Mr. Bothamley's conclusion is that all these methods are to be avoided, inasmuch as they give the appearance of gold toning, even though no gold at all has been deposited.

**PICTORIAL PHOTOGRAPHY, THE OLD AND THE NEW.**—The art aspect was dealt with in a paper contributed by Mr. A. Maskell, which was practically a renewed plea for considering artistic effect alone in regarding pictorial photographs. It might be found difficult, however, by

many to agree with the statement that "retouching or the alteration of the mechanical work of the lens is the only door through which art can enter into photography."

DR. JOLY'S COLOR TRANSPARENCIES.—Mr. E. J. Wall read a paper at the convention which referred to this process, and a lantern-slide example in colors was exhibited. The method is now too well known to require very full description. A sheet of plate glass is ruled with fine parallel lines, red, green, and violet, about 400 to the inch. This is the negative screen, and the sensitive plate is exposed behind it. An image is obtained in lines, and when a transparency is made by contact and bound up with a screen similarly ruled in colors like the first, a result in colors is obtained. The perfection of the results obtainable by the process will be proved by further experience.

**Brightly Lighted Landscapes and Orthochromatic Plates.**—For many years, owing to experiments and observations made by Captain Abney, it has been a recognized fact that orthochromatic plates gave no advantage over ordinary plates for landscape work in bright sunlight at the middle of the day. Recently, however, some critics who have failed to understand Captain Abney's contention have objected to this view, on the ground that they never see any white light in Nature, and Captain Abney has in *Photography*, of 11th July, published some interesting and useful notes in proof of his position.

In the cases instanced the high lights of the subject are lighted by direct sunlight as well as the light from the blue sky, whilst the shadows are illuminated by skylight and local reflections. Now take the case of an ordinary plate, which, of course, is sensitive to blue light. It is first pointed out that taking the colored image on the focussing screen there is very little variation between the spectrum of the green of a tree, the gray of a wall, or the blue of the sky. In all parts of the image there is a continuous spectrum. In fact, "any object above a few feet away has its local coloring shrouded by the white light reflected from the particles which intervene between it and the camera."

There is an abundance of blue light in sunlight as well as in skylight, and, the ordinary plate being sensitive to this light, it will give a fair representation of the objects where they reflect white light; in other words, in the relation of the high lights to the shadows.

If, now, an orthochromatic plate be used without a screen, the effect of its slight yellow sensitiveness *will be to intensify somewhat the high lights, leaving the shadows unchanged.*

This is so because skylight possesses but a small proportion of yellow rays compared with sunlight, and, as painted out, the high lights are sun

illuminated and the shadows chiefly skylighted. In other words, the negative will be a slightly harder one than on the ordinary plate, which is already the common complaint in such subjects with the ordinary plates.

Similarly, with a yellow screen, which cuts off the blue rays, the shadows being illuminated by skylight, which is much less rich in yellow and red rays than the sunlighted high lights, will be *relatively less* photographically active than before, and the negative would be harder with a screen than without one.

In a sunset scene it is different, for here the high lights are almost all orange and non-actinic, and the shadows relatively more blue and photographically active. Consequently, the strong effect of sunlight contrast will be better given by the screen plate than by the ordinary plate. In the same way, white clouds on blue sky require the use of the yellow screen, as it allows the yellow contained in sunlight reflected from the white clouds to pass with the very small amount in the blue sky.

**Photo-Ceramics.**—Efforts have been made from time to time in England to revive interest amongst professionals and amateur workers in these beautiful processes. Just now Messrs. Henry & Ward have issued a new practical handbook, and demonstrations have been given daily at the Imperial Institute Exhibition. Further, some of our leading firms have established special departments for the execution of work in photo-enamels, and at such reasonable prices as ought to encourage some demand.

**Wood Engraving and Process Blocks.**—The *British Journal of Photography*, of June 21st, refers to the interesting comparative examples of the same subjects, reproduced in both the above methods in *Wilson's Photographic Magazine*, and maintains that well-executed wood engravings are superior to process work for pictorial book illustration.

Now this question of rivalry and superiority seems really to depend somewhat upon the personal point of view, and it can only be rightly considered with reference to the aim and object of the illustrations. The fact is that every little book illustration is intended or required to be purely artistic. It is generally topographical, or illustrative of facts and incidents, or a record of faces. The worker devoted to pure art must limit himself to the most perfect methods of presentation that are available. The journal illustrator working for reproduction is on a different plane. Photography and process will increase their hold for these recording purposes, because of their inherent superior qualities for the task. As regards portraits in the magazines the photograph has it all its own way as a true and valuable permanent record, wood engraved reproductions being as a rule more or less lifeless, stiff and unnatural.

The same remark applies to the cases quoted from *Wilson's Photographic Magazine*. Neither the wood blocks nor the process pictures shown therein can be considered of any artistic value, and as topographical views, the drawing, the detailed facts, as well as the general relations, distance and perspective, are far more truthful and valuable in the photographs than in the wood engravings, according to our estimate. The wood block is made so that it is easy to print a bright and clear plate, which pleases the mechanical printer and the public, but the truth is not in it. The fact is, the wood method is not well suited for representing objects naturally in tone and texture. Its very handling is stiff and mechanical, and to get any appearance of truth of surface, of drawing and relation of parts, the labor and skill required and cost entailed, would be better expended in the superior method of painting plus photogravure reproduction.

**Developer for Bromide Paper.**—I notice that a worker recommends the use of a metol developer and a glycin developer for the purpose of gaining great control over color and gradation in developing bromide prints, and I can endorse his statements concerning these reagents for this purpose as giving a very useful practical method. The metol developer is rapid and gives speed and softness of gradation, the glycin is slow and tends to contrast. By the use of these two developers very considerable variation in effect is obtainable, and judiciously applied they are far more useful employed separately than any combination of reagents in one developer could be. No doubt other developers having the same respective characteristics could be made to serve the same ends, just as in developing plates which have received varying and unknown exposures it is advisable to have a normal, a restrained, and an extra energetic developer all to hand.

**Platinotype.**—A valuable work on this subject has been published under the joint authorship of Captain Abney and Mr. Lyonel Clark, who have been engaged upon the book for some years. The whole book is of practical value, and the portions on sensitiveness and gradation are especially interesting.

**Whirlwind Plate and Print Drier.**—This is an ingenious instrument, recently introduced, by means of which prints or plates can be mechanically rotated with great rapidity, and so dried in a very short space of time. No spray is thrown off in the procedure.

**A Self-Lighting Gas Burner.**—Mr. I. F. Duke has patented a device for igniting gas automatically, by means of a plug carrying platinum and palladium in a fine state of division and a platinum wire connection with the gas burner. When the gas is turned on heat is generated sufficient to make the short platinum wire red hot, and in a few seconds the gas is lighted. If this little device works reliably it should supplant the existing method of the bye-pass.

*London, August 10, 1895.*

## Beginners' Column.

### CHAPTER XXII.—CLOUDS.

BY JOHN CLARKE.

THERE is nothing that contributes more to the beauty of a landscape than a sky containing some fine natural clouds, but the beginner who has practically followed me through the preceding chapters will have discovered that there is nothing more difficult to get, or rather that nothing is so rarely got as a really good negative in which both landscape and sky are equally perfect.

But the aforesaid beginner will also have discovered that there is little in photography that gives more pleasure than the successful overcoming of difficulties, and if he is made of the right kind of stuff he will not be satisfied till he can give to his pictures the crowning glory of a cloudy sky.

There are various methods by which this may be accomplished, *a*, by a compromise in the exposure under conditions that but rarely occur both landscape and clouds may be secured in one operation; *b*, by giving an exposure suitable for the landscape, developing in the ordinary way and to the ordinary extent, and then uncovering the clouds by local reduction; *c*, by exposing two plates in succession, one long enough for the landscape, and the other short enough for the sky, and having recourse to combination printing; *d*, by making, as opportunity occurs, and keeping a stock of cloud negatives, selecting therefrom one suitable for any particular negative and combining the two.

The latter is, on the whole, the simplest and most satisfactory, although it has often led to incongruous results by the selection of unsuitable clouds, or clouds lighted in a direction other than that by which the landscape was lighted. To obviate this, and as far as possible assist in obtaining a proper selection, I have long been in the habit of marking both cloud and landscape negatives as follows: first, in my notebook at the time of exposure, and then with a writing diamond on the negative after development. For example, the marking on a negative exposed this morning is "Sept. 19, '95, N. x E., 7.30 A. M.," which tells me without further examination that the landscape lay north and by east of the point of view, and that being lighted from a little behind the right the shadows cross towards the left at a slightly receding angle.

With both cloud and landscape negatives marked in this way, it will be evident that to prevent incongruous lighting it is only necessary to select a cloud negative of as nearly as possible the same markings, and

the only thing left to the judgment of the photographer is the selection of suitable masses. For this purpose a tolerably large collection of cloud negatives is desirable, and the photographer should let no opportunity of securing them slip. The landscape is always with us, but suitable clouds are like angels' visits, and must be caught on the wing.

Masses of dark clouds against a clear sky are effective for some subjects, and make beautiful examples of "cloudland" by themselves, while at the same time they are easily photographed. A rather slow plate, a smallish stop, say  $\frac{f}{32}$ , a brief exposure, and development in a solution weak in reducer, or, indeed, weak altogether, say, one part of the normal developer already recommended, to two parts of water. Far more generally useful, however, are negatives made from the occasionally to-be-seen beautiful masses of white cumuli on a dark blue sky, although they are far more difficult to photograph, and, indeed, cannot be successfully secured in the same way, the actinic action of the blue and the white being almost equal.

Perhaps nowhere in this or any other country are more beautiful arrangements of such clouds to be seen than at Point O' Woods, from where I now write. It is a narrow strip of ground between the Long Island Great South Bay and the ocean, and for marine work is simply unsurpassable. Yesterday, and on several other days during the past six weeks the bay was covered with the white wings of hundreds of vessels of various rigs, from the humble "cat-boat" to the imposing schooner, flying hither and thither, which, with foregrounds of portions of the Point O' Woods pier, rowing boats innumerable, pretty cottages on sand dunes, and masses of foliage for foregrounds, gave opportunities for snap-shotting far ahead of anything that I had hitherto seen, and all easily within the compass of a rapid plate and a good shutter. But there was something more, something more difficult to get, but which when got was better than all the rest. Running apparently from end to end of the bay, and about over the middle distance was a bank of snow-white cloud against the deepest cerulian sky, an apparently endless chain of cumuli in which the most unimaginative could not fail to find food for fancy—a Phidian frieze as beautiful as ever was wrought in marble, and with the additional charm of continuous automatic change into new forms, each one more beautiful than its predecessor.

To successfully photograph this in the ordinary way, is, as I have already said, impossible; but by reducing the actinic power of the blue sky so that it shall be considerably less active than the white cloud, its accomplishment to a certain extent is easy, and the degree of success is dependent on that reduction. For this purpose color filters are most

convenient, and as the result of many experiments I have come to the conclusion that the best is a rather pronounced yellowish green, or greenish yellow. That which I employ was made for me by Mr. Carbutt. It is a colored film, hermetically sealed between two very thin glass plates, and is placed inside the camera behind the lens. Experiments show that the screen increases the required exposure on ordinary subjects three or four times, but my best results on the clouds in question were exposed for less than a second with  $\frac{f}{22}$ .

Having obtained a stock of negatives marked as already suggested, and desiring to print in clouds, it is only necessary to select one that is otherwise suitable, and with marking as nearly as possible the same as that of the landscape negative. The first step is to place the latter against a window pane, cover it with a piece of translucent paper—ordinary writing paper will do—and draw a pencil line across the lower part of the sky, roughly following the outline of such objects as are seen against it. Paste this on a piece of opaque paper as large as the outside of the printing frame, and when dry cut the sheet in two along the pencil line.

You will now have two masks, one for the landscape and one for the sky. Place the landscape negative and sensitive paper in the frame, and to the outside of the latter temporarily fix the sky mask by a few tacks, or paste, separating the edge from the glass by a little cotton wool. When sufficiently printed, remove the landscape negative and place that of the sky in the frame, replace the print, cover the landscape portion with its mask and print the sky. This last printing may be done in the same way as the first, taking care that the clouds are not printed so deep as to be too pronounced; but a better effect is generally produced by covering the whole frame with a sheet of cardboard, and slowly moving it up and down from the top of the sky to the upper part of the landscape, thus producing a lighter shade towards the horizon.

Where a number of prints are to be made from the same negatives it will be obvious that labor will be saved by employing two printing frames, one for the foreground, the other for the sky, as in that case the masks, once properly placed, need no further alteration.

In this way, with very little practice, a charm may be given to even a very uninteresting photograph, and the photographer who gives it a fair trial and finds how simple it is will never again make pictures with bare skies.

## Photographic Printing by Machinery.

SEVERAL years ago there was exhibited here a small machine for automatically making exposures under one negative on bromide paper. Now the idea has been enlarged so that we have automatic photo-printing done on a mammoth scale.

The *Scientific American*, in an article on the subject, to whom we are indebted for the engravings, says:

This new process of rapid printing consists essentially of a roll of sensitized bromide paper a thousand yards in length by something over a yard in width, unwound in a room illuminated by red light, fed under two or more negatives, then automatically pressed upward by a platen against the face of the negative, at the same instant also automatically exposed by the flashing of incandescent electric lamps above the negatives, then moved along the proper distance for a fresh section to be exposed, and finally wound up on another roller.

The roll of exposed film is next removed to another room and automatically developed, fixed, alumed, washed and dried, the finished pictures being wound up on a third roll, from which they are cut to size and mounted on cards in the usual way.

Actually to see how easily and certainly this process works and learn of the obstacles that had to be overcome, not only surprises but astonishes the old-time photographer. It is, in fact, a new industry in the line of photographic printing, and will be useful in hundreds of various kinds of business, where prints by hundreds or thousands from one negative are desired.

The accompanying illustrations, sketched from the apparatus in operation, give a very good idea of its construction and working.

Taking the exposing apparatus first, Fig. 1, the roll of unexposed paper supported on a shaft on the left may be seen hanging therefrom in a loose loop and enters the inclined apron, thence passes directly under the negatives, which are secured to the underside of a large sheet of glass by paper strips in the usual way. The glass plate is held in a removable frame, which permits the negatives to be easily located and secured. When the plate is in position vignetting masks are laid on top of the plate over the negative, and if, by a trial, the exposure has been found too long for one negative, thin sheets of waxed or tissue paper are interposed to weaken the light to the proper degree. Several negatives of a similar degree of density may thus be secured to the plate, and each adapted to the light necessary for a proper exposure. Much care and nicety of judgment is required in this adjustment, as the success of the





FIG. 3.—AUTOMATIC PHOTOGRAPHIC PRINTING. THE DEVELOPING APPARATUS.

later manipulations hinges upon it. Above the negative plate is observed the exposing chamber, suspended by a rope passing over a pulley in the ceiling, and balanced at the other end by a weight; this arrangement permits the whole to be raised above the negative plate, giving easy access thereto for the adjustment of vignetting masks. In each side of the case are four 32 candle power incandescent electric lamps, connected by flexible cords to a switch on the wall and to the automatic switch below. The heat from the lamps was found to be excessive, and ventilation was obtained and the temperature kept quite uniform by forcing in a current of air with an electric fan or air pump. A square red window on the side allows one to observe that all the lamps go when the switch is turned on.

After exposure the paper is wound over a pull roll, adjoining the

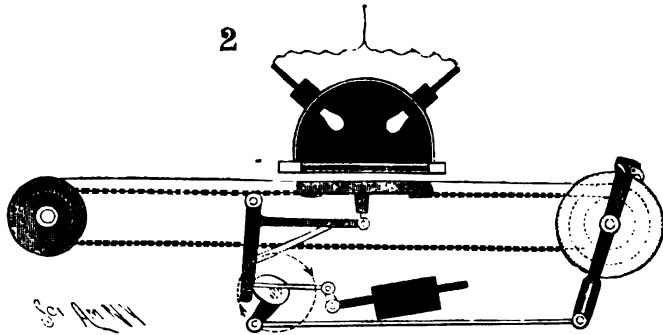


FIG. 2.—DETAIL OF EXPOSING APPARATUS.

exposing chamber, by an intermittent quick movement equivalent to the length of the negative plate or at any set distance, passing thence to a roll whose axle works in ball bearings, on which it is wound, the roll being rotated by an attendant. A reciprocating motion is imparted to the pull roll by means of a connecting rod attached to a crank shaft located under the feed apron, at the lower left hand portion of the machine.

The end of the connecting rod at the pull roll engages in a slotted lever, the upper end of which has a ratchet and pawl operating in teeth on the periphery of the pull roll. The end of the rod may be moved nearer the center of the roll in the slotted lever, and so regulate the throw or amount of rotation. A sprocket wheel at the opposite end of the pull roll is connected by a chain with the feed roll. It is evident, therefore, when the pull roll makes a half revolution rapidly, the feed roll is also simultaneously rotated, causing the same amount of paper to be unwound as is taken up at the other end. Geared with the crank

shaft under the feed apron is a shaft having a cam for operating at the right moment the electric switch for the lights, and another cam for lowering the platen (see Fig. 2). Prior to the moment of exposure, the cam as it rotates, permits the pivoted weight to draw the bell crank lever supporting the platen forward, and press the platen upward against the underside of the paper, placing the sensitive side of the latter in contact with the negatives during the interval of exposure (usually two seconds). It is then drawn down until a fresh section of paper passes under the negatives and the operation repeated. The movement is quite similar to the platen of a printing press.

The roll, containing two or three thousand exposures, is carefully protected from white light and carried to the room in which is located the automatic developing machinery. (Fig. 3.)

FIG. 4.—THE DEVELOPER TANK.

It is a most interesting sight to see the gradual development of the exposures here. As may be imagined, the exposed roll is set on supports at the right hand end of a long wood tank containing separate watertight compartments, and is carried over a roll into compartment No. 1, about three and one-half feet deep, filled with 120 gallons of an old solution of ferrous oxalate of potash developer. Referring to Fig. 4, it will be noticed that half way up from the bottom of this compartment is a submerged roll. Running down vertically in the center of the sides of each compartment is a slotted way to guide the axes of small, loose, brass rollers, which carry the paper to the bottom and freely revolve as the paper moves forward.

Over the division of each compartment is an actuating roll, all being geared to a worm screw running along the top edge of the long tank its entire distance, which gives every roll the same speed.

The paper, after passing over the submerged roll (Fig. 4) and down again, thence up out of the tank over the roll between the first and second tanks and down into the fresh ferrous oxalate developer in this tank, shows the images half developed out. The electric lamps overhead are a non-actinic red.

Coming out of the second tank, the images are fully developed, thence the paper passes on into the third vat, containing dilute acetic acid, which dissolves out all of the iron left in the paper from the developer, and acts as a check to further development, thence in the next vat the paper is washed with water; next it passes into a fixing vat containing a

solution of hyposulphite of soda, is again washed in the following tank, then it passes into a vat of alum water, which hardens the film, and finally goes through two or three vats of water, receiving a final spraying, as shown in Fig. 4.

From the last spraying it is led on to an endless canvas carrier into a long inclosed chamber filled with a current of warm air, heated by a gas furnace noticed near this end. At the end of this heated chamber the paper comes out perfectly dry, and is rolled up with the pictures all on it. When the run is complete the roll of pictures is unwound, they are cut off to the respective sizes desired, and mounted in the usual way.

While the paper is traveling over the several rolls, attendants with sponges sponge off any dirt or light material which may cling to the surface as it is drawn up from the solutions. At the further end of the trough the paper with the pictures upon it may be seen traveling upward.

A very curious anomaly is the mixture of white and red light in the developing room. The two lamps over the developer and roll where it is unwound are red, while all the others are white. There is just enough red to neutralize the white at the beginning. Thus it makes the brightest dark room we call to mind, and was a surprise in the art of photographic manipulations.

There are twenty-seven rollers on the large box tank, and the tank itself is not far from one hundred feet in length. The paper travels through the tanks at the rate of ten feet per minute, and it is possible to arrange enough cabinet negatives in the exposing machine to expose 245 cabinet pictures in a minute. But an ordinary day's work of ten hours yields 157,000 cabinet pictures.

We are informed this is the only machine of its kind in this country, and but one other in Germany. The work which we saw made by it was very satisfactory and uniform.

In dealing with such large quantities of material, uniformity appears to be easily attained, and the applicability of a similar machine, properly modified, to the development of negatives and films having had reasonably uniform shutter exposures, may be a possible outcome of this invention.

For the foregoing particulars we are indebted to the Automatic Photograph Company, No. 25 West Twenty-fourth street, this city, through whose courtesy we were permitted to witness all the details of this remarkable and interesting apparatus and plant.



See page 414 for rules on our Second National Pictorial Competition;  
also page 413 for Beginners' Competition.

## An Experience With Metol.

BY GEO. E. BLACKHAM, M.D.

I HAD used metol ever since it was first obtainable in this country, and had come to consider it almost the ideal developer. I had used various formulæ for one solution and two solution developers with metol for the reducing agent, and finally settled down to the one solution formula of Cramer as, on the whole, the best developer I knew of. It keeps well, is fairly rapid, and, with a little patience and management, will bring out a fair image on a plate which would be hopelessly under exposed with some other developers, and, though a one solution developer, can be modified by the addition of water so as to secure the advantages of most two solution developers. In fact, I had never had any trouble with it till a couple of months ago, when I had some roll films to develop. My solution of metol and soda bicarbonate was a little old, but worked about the same as when fresh, but, as the films were inclined to curl up out of the developer, I held them down in it with the fingers of my right hand, thus keeping my fingers in the developer much more than is my custom when developing plates. I got good negatives, but the next morning the skin on the fingers that had been soaked in the metol solution was as stiff as parchment, and felt as if it had been slightly scalded. This condition continued for about a week, when the outer layer began to peel off, leaving the new skin underneath it very pink and exquisitely tender. It was nearly a month before my fingers regained their normal appearance and sensitiveness, and now I am not using metol any more without protecting my fingers with rubber finger cots. I would like to have some one explain why it was that I escaped any ill effects during a couple of years' use of metol, and then suddenly suffered so severe an attack of dermatitis from the use of a solution with so mild an alkali as the bicarbonate of soda.

### "AMERICAN AMATEUR PHOTOGRAPHER" BEGINNERS' COMPETITION.

For the best photographs made by beginners, we offer the following prizes:

*First Prize:* Fifteen dollars' worth of photographic stock.

*Second Prize:* Ten " " " " "

*Third Prize:* Five " " " " "

One year's free subscription to the AMERICAN AMATEUR PHOTOGRAPHER will be awarded to each of the next seven competitors in the order of merit.

#### Rules.

*Rule 1.* All entries must be forwarded to Alfred Stieglitz, 162 Leonard street New York, and marked "Beginners' Competition."

*Rule 2.* The name of photographer, with title of picture, to be legibly written on back of each mounted photograph.

*Rule 3.* The competition is only open to those who started practicing photography since July 1, 1893.

*Rule 4.* All pictures must be sent prepaid.

*Rule 5.* The whole of the work must be that of the competitor, and must be mounted.

#### Notes.

The editors reserve the right of publishing reproductions of any of the photographs submitted.

No competitor shall receive more than one prize.

Pictures will not be returned.

All pictures entered for competition must be received by October 15, 1895.

Judge: Alfred Stieglitz.

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## SECOND NATIONAL PICTORIAL PHOTOGRAPHIC COMPETITION, 1895.

### CONDITIONS.

Only competitors residing in either the North or South American Continents will be eligible to enter this competition.

Every competitor shall send in four prints.

The pictures submitted must be exposed, developed and printed by each competitor without assistance.

At the close of the competition the mounted prints will be sent to London, England, and judged there by two acknowledged leaders of pictorial photography. Their verdict will be final.

Each competitor is required to pay the AMERICAN AMATEUR PHOTOGRAPHER an entrance fee of five dollars at the time the prints are sent, the aggregate amount, after the deduction of expressage expenses to and from England, to be used in the purchase of three prizes of silverware, appropriately inscribed; fifty, thirty and twenty per cent. to go to the first, second and third prizes, respectively.

In case only two prizes are awarded, the division to be sixty and forty per cent.; if only one prize, the winner to get all.

After the judging is completed and the prizes are awarded, all the pictures will be returned to this country and the collection exhibited, from time to time, in the principal cities of the United States, and finally returned to the contributors.

In case there should be less than six entries the competition will be declared void, and the entrance fee and submitted photographs will be returned to the senders at their expense.

In case the pictures submitted are regarded by the judges as below the required standard the pictures and entrance fee will be returned, less the *pro rata* cost of transportation.

No entry forms are required, but competitors must send a list of prints, each to be marked on the back with an assumed name or symbol, and numbered, the list to be enclosed in a sealed envelope bearing on one corner the same name or symbol that is put on the prints.

The prints must be mounted, the package addressed and sent prepaid to "American Amateur Photographer Pictorial Competition," 239 Fifth avenue, New York.

All entries must be in by October 15, 1895.

# THE AMERICAN AMATEUR PHOTOGRAPHER.

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A Monthly Review of Amateur Photography.

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No. 9.

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ALFRED STIEGLITZ.

EDITORS

F. C. BEACH.

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## Editorial Comment.

*Photography in War.*—We find under this head in the Japanese photographic paper *The Shashin-Sowa*, for June, a very creditable journal, by the way, which publishes its matter in English and Japanese together, an interesting account of the difficulties a "Photographic Staff," originated by the Emperor of Japan, went through in photographing some of the operations during the late war with China. It is supposed to be the first "Photographic Staff" ever appointed to an army. They carried a hand camera and a 10 x 12 camera, and had nine coolies and a track wagon. They were present at the Kinchow and Port Arthur engagements and at Wei-hai-Wei. The equipment was kept as light as possible. They went through actual engagements under showers of bullets. The results, however, were not what they had hoped for, because the engagements took place early in the morning before good daylight arrived and were only of short duration. They also had to contend with strong winds, severe cold weather and feeble light. The difficulties of manipulation were unexpectedly severe, the exposures having been under-timed, development had to be kept up for three hours at a time, and the temperature was so low that before development was finished the developer would freeze over on the surface. They had scarcely any fuel to keep warm.



Printing was very tedious on account of the feeble light, and the toning and fixing baths would freeze. After prints were treated and spread out to dry, small grains of ice would form on their surface, even though the room was warmed as much as they could get it. For dark rooms they were much more fortunate, as the Chinese houses are made of stone or brick, and to each room there is only a small window. Half of the room has no flooring, and this was used as a drainage for the waste solutions and water. By shutting the window and hanging a blanket at the entrance, they had a very comfortable dark room; as a matter of fact Chinese houses are dark rooms in themselves.

From their experience it would appear that a cheap gasoline stove could be considered one of the proper appliances for a photographic staff of an army to carry. We shall hope in the future to see some of the interesting pictures of the war in the next set of lantern slides the Photographic Society of Japan sends to the United States.

In the same number we note the American set of slides sent to the Society last spring have been received and are appreciated.

*Our Prize Lantern Slide Set.*—As stated in a previous number, this interesting and carefully selected set of slides is available for use by subscribers, clubs, and societies during the coming season. There is work in it by foreign and American lantern slide makers which affords a very good and instructive comparison as to which is the best in technique.

The only conditions of usage are that the slides shall not be kept longer than a week or ten days, and that the transportation one way shall be paid. We will book future dates on application. At present the set is being exhibited before Western clubs and societies, but is expected to be East again in October or November.

*The Bridgeport Library Photographic Exhibition.*—Mr W. J. Hills, who is doing so much to make this exhibition a success, advises us that special arrangements are to be made for the exhibition of lantern slides, and invites all amateurs and others interested in them to send exhibits at his expense. The library pays transportation expenses each way, besides the expense of packing. We presume occasional exhibitions of slides on the screen are to be given. The exhibition is to open on Sept. 21st and close Oct 31st. There is usually a fine attendance, many thousand persons visiting it. We urge all amateurs to send pictures to this exhibition. It is seldom that such favorable terms and conditions are made. Send to Mr. Hills, Superintendent Bridgeport Library, Bridgeport, Conn.

*Effects of the Metol Developer*—Dr. Blackham relates on another page a curious experience he had with the metol developer while developing films. He noticed after immersing the fingers in the developer, in holding the ends of the film under the developer, that the skin on some of the fingers began to crack and peel off, leaving a delicate pink under skin. His experience coincides somewhat with ours, though we never used as light a carbonate as he, but instead carbonate of potash. We were not sure at first that the peeling was due to the effect of the developer, but now believe it was helped on by it. We seldom develop more than a dozen 4 x 5 plates at a time, two in one 5 x 8 tray, and imagine that in putting the index or second finger partly in the developer to lift out the plate, contact with the skin produced some effect, which eventually showed in a day or so by the cracking and peeling off of the outer skin. It is possible that the effect is due to the alkali in the developer. Further experiments will be necessary to decide this point. But even with the slight inconvenience mentioned, metol still bears an excellent reputation as a remarkable developer and well adapted for all around work.

*Our Competitions.*—Attention is called to the several competitions announced on other pages. We hope they will be generously supported, and urge beginners and others to prepare prints and slides.

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#### PHOTOGRAPHS RECEIVED.

W. C. FURNAS, of Louisville, Ky., sends us a batch of prints and wishes us to criticise them from an artistic point of view. The photographs have no value pictorially, most of them being absolutely topographical. The subjects under consideration would hardly lend themselves to the making of pictures; in short, the choice is decidedly poor. One cannot make a picture of an ugly brick wall. The title does not make the picture. The titles, "A Glimpse of the Ohio Cottage Gates," "Early Spring," "Lights and Shadows," would lead one to expect pictures. But the pictorial quality of the photographs in question ceases with them.

Mr. Furnas will have to try again, in the meantime studying some of the reproductions in the *AMERICAN AMATEUR PHOTOGRAPHER*; although not always first class, they nevertheless have some pictorial value.

SUBSCRIBER sends us two arisotypes which are technically first class. They both show promise in a pictorial way, although as yet having but little or no value. "Subscriber" must use plenty of paste for mounting and rub *down* the edges, especially when placing the photograph on the mount. Slightly moistening the mount sometimes is of advantage in making arisotypes stick. Follow the instructions invariably given with each brand of paper for squeegeeing, and your prints will not stick. Try drying your prints before squeegeeing and then simply moisten the surface of the same and bring into contact with the ferrotype plate or glass, as the case may be. This is often a remedy of your trouble.

## CORRESPONDENCE.

## THE "HOMEWARD" PICTURE.

*Editors AMERICAN AMATEUR PHOTOGRAPHER :*

*Gentlemen:* Since you invite an expression of opinion on the subjects mentioned by "Subscriber" in the July AMERICAN AMATEUR PHOTOGRAPHER, here are some impressions of an amateur of some two and a half years' experience, success and failure, who has read a good deal and formed some opinions, but who has not accomplished anything notable to entitle him to speak with authority.

In general, I try to judge pictures from the standpoint of the idea or impression that I believe the photographer wishes to express or convey. If a group is intended to be as nearly as possible a good portrait of each of the persons represented in it, then all should have the best obtainable advantages in the matter of pose, lighting, position and focus; but if the operator wishes to produce an artistic picture and give prominence to some one or more figures, then such figures should occupy the most prominent position and have the advantage of sharp focus, leaving the accessory figures less sharply defined. So in outdoor work. If the most accurate obtainable representation of all the parts of a house and its surroundings, or a group of trees is desired, every part should receive the same treatment as nearly as may be; but if it is desired to produce an artistic landscape or view, a real picture, some object or point must be chosen for the most prominent part of the picture, emphasizing it by prominence and sharpness of focus, and allowing other objects to show that they are merely accessory, by their being more or less out of focus.

In speaking of individual pictures, I am aware that I am liable to be charged with criticising my superiors; but I do not propose to sit in judgment—I only express my opinion, which I suppose is the privilege of the humblest of us.

In "Homeward," by Karl Greger, I understood the mist in front of the sheep that "Subscriber" speaks of, to be a cloud of dust raised by the many feet and borne in front and to the right of the flock by a light wind, a circumstance I have often observed. I consider the picture very fine.

Mr. Greger's "Evening Near Dordrecht," in the July AMERICAN AMATEUR PHOTOGRAPHER, I do not admire so much. It is one of the least objectionable of a class of pictures with water in the foreground, that always suggest to my mind that they might be reversible, by reason of the strong reflections of objects in the water.

The fact that all the interesting pictures of Pussy accompanying Mr. Moore's article in the July AMERICAN AMATEUR PHOTOGRAPHER, with one exception, are more or less out of focus, has led me to wonder whether they were made so intentionally, or whether it is because they were the best that could be obtained. I think all would be much improved if focussed sharply, as the splendid "Maltese Cross."

August 13, 1895.

W. C. FURNAS.

*Editors AMERICAN AMATEUR PHOTOGRAPHER :*

*Dear Sirs:* There is a story of an old lady whose daughter was a budding "artist," evidently of the Impressionist school, and the mother was very proud of her daughter's productions. Showing one of them to a friend one day, she was asked, "But what *is* it?" and made reply, "Wall, it's either a keow or a rosebud, I dunno which. But it's *somethin'* red."

I am reminded of this tale by the varying comments of "Another Beginner" and "Fred Felix" upon Mr. Greger's picture of the sheep.

It occurs to "Another Beginner," "If Mr. Greger's picture, 'Homeward,' was taken directly after a shower, the sheep may not be 'entering a mist' at all, but carrying their 'mist' with them;" while to "Fred Felix," "The 'mist' that impresses 'Subscriber' as detracting from the value of the picture is really one of its most realistic features, as, instead of being mist, it is a reproduction of the dust the sheep in front are stirring as they pass along the highway." A picture that answers equally for "directly after a shower" and for so dry a time that a flock of sheep are obscured by "the dust the sheep in front are stirring," must possess an artistic versatility rivaling that of the oil painting referred to in the opening sentences of this letter.

Yours truly

PHILISTINE.

August 17, 1895.

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OBITUARY.

CHARLES WAGER HULL.—On recording the death of a man so well known in the circle of amateur photographers in this city as Mr. Hull was, we are certain his loss will be as keenly felt by his numerous friends as it is by us. He was an indefatigable worker, one of the early photographers when to photograph for pleasure was not only expensive but burdensome. He was fond of telling of his early experiences when but four or five other photographers associated with him formed the first society or club of amateur photographers ever organized in New York. Mr. O. G. Mason, in a sketch of his life in the September *Photographic Times*, says of him:

"To Mr. Hull more than to any other was due the credit of success attending the introduction of the tannin process in America. He was never content with the best others could do, but constantly sought higher and nobler results. The knowledge he gave to operators was usually far more valuable than any which he received in exchange. Early in 1860 he was elected Secretary of the American Photographical Society. Early in the seventies he was chosen general superintendent of the fairs of the American Institute, and later when the modern dry plate was put on the market, about 1882 or 1883, he became much interested in the newer photography."

In 1884 he assisted in the organization of the Society of Amateur Photographers of New York, and has been a member ever since. Later he helped superintend the organization of the School of Photography of the Chatauqua University. He made frequent contributions to photographic periodicals, and in a series of papers he composed "The Photographic Instructor," published by Scovill & Adams. The past two summers he has spent traveling in the West. This summer he went to the State of Washington, and on July 24th was taken suddenly ill at Tacoma and passed away immediately. The funeral was held at his late residence at Larchmont, New York, on August 1st, and was largely attended.

He was a witty man in some respects, very frank in expressing his opinions, and a great lover of making photographs. We shall all regret that we shall never more have the pleasure of his genial presence.

## Society News.

### The Fifteenth Annual Meeting of the Photographers' Association of America.

BY DR. HUGO ERICHSEN.

In order to prevent any misunderstanding and place the credit where it belongs, I desire to state right here in the beginning that this report of the Fifteenth Annual Convention of the P. A. of A., held at Detroit, August 6th, 7th, 8th and 9th, is based mainly on the reports of the newspapers of the City of the Straits, which earned the gratitude of the visiting photographers by their accurate and impartial reports, a gratitude that was properly expressed before the Association concluded its convention. The Detroit meeting will long be remembered as one of the most successful held in the history of the Association. Everything was done on the part of the citizens of Detroit and the Entertainment Committee to make the stay of those attending the convention a pleasant one. The photographic exhibit was one of the best ever brought together in this country, and the weather during the sessions of the convention was fine. All these circumstances combined to make the meeting the unqualified success that it was. The convention was held at the Detroit Museum of Art. It was well attended, every large city and every State and Territory being represented.

This year the photographs placed on exhibition were rich in pictorial effects, most of them being on a matt surface. In the opinion of all the photographers present the collection shown was easily the best ever exhibited in the line of artistic work. The effect of the exhibition will be far reaching. The number of pictures shown was not as great as that displayed in the St. Louis Convention last year, yet the quality was way ahead of the past exhibitions.

It was utterly impossible to get all the pictures in place by August 6th, the opening day. All during that day the hammering went merrily on, and there was such a racket in the morning that the business session that was to be held at 9:30 A.M. was postponed until the afternoon, when President John Schneider, of Columbus, delivered his annual address, which was as follows:

"In the name of the Photographers' Association of America I bid you a most hearty welcome, one and all, to this Fifteenth Annual Convention, and may the few hours we spend here together live in your memories as hours of unmixed profit and pleasure. A glance backward will convince you of the many benefits we have derived from this National Association. Let us consider where we stood fifteen years ago, and we can easily note the advancement we, as a profession, have made. The annual conventions have been a benefit direct and far-reaching to those who have attended regularly, and many others own the good effect of their influence, although indirectly applied. Who, then, is there among us who will say that the aim of this Association has fallen short of its mark? But let us turn our attention for a moment upon the present, and will we not find that our government, once so efficient, is not adapted to the spirit of the times? State associations are now the order of the day, and personally I earnestly hope to see the time when each State can boast a live and flourishing association within her boundary. The duties which we, as the National Association, owe to the State associations, and the best method of discharging those duties, will be presented for your consideration in a revision of the constitution, which, I trust, you will give your most careful and unprejudiced attention. I will not here go into details. Sufficient it is to say that the main idea is the amalgamation of the State societies into a grand National association, meeting once in three years, if you, aided by the State associations, deem it wise to make this change.

"This departure once made we may look far into the future, and though we paint it in glowing colors of the modern impressionist, I predict that we shall be in no wise disappointed, for the P. A. of A. will be a staunch ally of the State associations and *vice versa*. Before leaving this topic let me add the suggestion that some radical difference be made in our method of handling prizes. If we have a triennial convention, as the new plan recommends, let there be a grand prize offered, for which photographers of each State will first compete—the winner in each State competition being thus entitled to enter the lists of the National competition. Each operator, with the odds thus doubled against him, would be spurred to new effort, and the resulting pictures be immeasurably improved. This, however, is but a suggestion.

"The social side of our meetings not only helps us on to warmer individual friendships, but it engenders in us a pride in our profession, a strong desire to raise that profession to the highest place among the world's occupations. I know that, in the light of the warm and helpful friendships already established, there is no need for me to impress upon you the benefits of our social life. As I look over this assembly and think of the many warm and pleasant friends those conventions have brought me, I can heartily say it is good to be here, and I am confident that you will all join me in the words. I thank you."

Jex Bardwell, the veteran photographer, entertained the members in the evening with a stereopticon exhibition, and showed a large number of very fine foreign views and humorous scenes. Mr. Bardwell was one of the prominent figures of the meeting, and is an authority on the olden times of the art.

On the following day the committee that had been chosen to remodel the constitution made a report at the morning session, and recommended that the Association should be parental in its nature, exercise supervision over subordinate State organizations, and become a delegated body with the powers of similar grand organizations. It was to embody the principles of the National associations of different orders, and be the one great order among photographers.

Mr. Bridges wanted to admit not only the professional photographers and manufacturers, but was also in favor of admitting amateurs and all who are specially interested in the photographic art, limiting the power to vote to professional photographers only, making it a grand association of individuals.

Mr. Pirie MacDonald, of Albany, N. Y., did not agree with this at all. He believed the greatest good would come from making the National body a society of societies, drawing its membership from the smaller State organizations along the same general lines as was suggested by the committee.

Delegate Appleton, of Ohio, the pusher of the Ohio salon idea, wanted the National organization on the same plan as Ohio has, and Ohio has the strongest organization of its kind in the world. He wanted the society to recognize art as did the Europeans, and would model the constitution so as to make it like the art societies of Paris. He would not have gold medals given in any but the National body, and make competition open to those only who had won in their own State. In this way he would have three grand prizes for excellence.

Mr. MacDonald's idea finally prevailed, and a committee, consisting of Carbutt, Decker, Appelton, Cramer, MacDonald, Steckel, Todd and Hayes was appointed to draft a constitution along the lines MacDonald had outlined. By the request of President Schneider, Mr. Carbutt, the first president of the Association, was called to the platform and made an address of congratulation to the society and its officers. He told how fifteen years ago the body had held its first meeting, and briefly alluded to the tremendous advance that had been made in the photographic art. He pointed to the benefit that came to all members by thus meeting together, seeing each other's work and exchanging ideas, and made a lively illustration by drawing the

parallel between the first meeting and the present one, the greatest, from an art standpoint, ever held.

His address closed the morning session, but before the delegates had all retired Secretary Hayes received a letter signed by the mayors of St. Paul and Minneapolis, jointly, and by the Commercial Club, of Minneapolis and St. Paul, asking the Association to choose the Twin Cities for its next regular place of meeting.

The afternoon was consumed in selecting the judges. The manner of choosing them consisted in submitting twelve names to the members, who marked off eight and from these eight three were drawn, blindfold, from a hat. The judges thus chosen were: W. L. Smith, Saginaw, Mich.; Edward Husher, Detroit, Mich.; and J. W. Kellmer, Hazelton, Pa.

In the evening Mr. A. H. Griffith, the Director of the Detroit Museum of Art, delivered an eloquent address on photography, during which he made many happy remarks, and in which he suggested a novel scheme.

His plan was to have a central room strewn with books and papers, into which the subject would be shown, and left to amuse himself as best he might. He would probably pick up a book or paper that pleased him, and while he was reading it a servant would come in and tell him to call next day for the proofs. The gallery would be surrounded by operating rooms connected with it by peepholes which would give the photographer a full view of every part of the room. The photographer would not appear at all, and the visitor would not know when he was being photographed, consequently his pose would be a perfectly natural one.

The idea seemed to impress the delegates favorably, but, of course, was impracticable, owing to the heavy expense it would entail.

The judges set to work bright and early on Thursday, August 8th, the third day of the convention.

At the business session, the Committee on Constitution reported a modification of the society of societies idea. In brief, they were in favor of deferring the reorganization until the next meeting, and until the Executive Committee had an opportunity to confer with the various State organizations. The report favored amending the constitution in the mean time by making the Association composed of three classes of members, the professional photographers and their assistants, who shall have full powers and be eligible to vote on all matters and for officers; the associate members, who should not have a vote but otherwise be members, and the third class, the honorary members, composed of such persons as the society sees fit to elect either for their work in the art or for their service to the society.

After a long discussion over the amendments it was voted to accept the report of the committee, and the committee was directed to confer with the State associations and report at the next meeting.

The election of officers was the next business in order. There were the three candidates for the presidency, R. B. Bellsmith, of Cincinnati; J. Ed. Roesch, of St. Louis, and George Steckel, of Los Angeles. The first ballot did not result in an election, but the second showed Bellsmith as the favorite over Roesch, Steckel's name being withdrawn.

Roesch was not a candidate for the vice-presidency, and Steckel walked off with the honor, while J. W. Root was chosen Second Vice-President. The enthusiasm of the day came on the nomination for Treasurer. Pirie MacDonald rose to "nominate a man who had made the convention the success it is," and a man who had the pluck to take hold when he (McDonald) was forced to resign; a man not known to the

Association a year ago, but known to every member, and then he named Clarence M. Hayes, of Detroit, and moved that the President cast one vote for him. Then the delegates cheered for Hayes, and President Schneider, who started to speak, could not be heard for the din. He made a few remarks on casting the vote of the Association, and then the audience again broke into applause for the Detroiters, and some one called for three cheers and a tiger, and they were given with a will that called the judges running down from their duties in the room above.

Mr. Hayes, who has had practically everything to do with the management of the present exhibition, received three hearty cheers as his reward. A vote of thanks was passed to A. H. Griffith for the use of the Art Museum, and a committee was appointed to put it in some substantial form.

A vote of thanks was also passed to the press.

The present constitution will remain in force until the January meeting, when representatives will be asked to meet the Executive Committee and agree upon a constitution for the National Association.

Delegate Rockwood, of New York, spoke briefly on the copyright law, and urged photographers to protect their studies therewith. He cited a case of general application, in which a man of National reputation prefaced his request for a sitting by exacting a promise from the photographer that the picture would not be used in the newspapers. Too, often, the speaker said, such requests could not be kept, on account of the almost universal pirating of photographs by newspaper and magazine publishers.

Instructive papers were read during the afternoon by W. F. Miller, of New York, on "Practical and Artistic Photography;" by Pirie McDonald, Albany, N. Y., on "The Association," and George Sherry, Toledo, on "Genre Work." In the course of his remarks Mr. McDonald said: "The mediocre man, or woman, never does a brilliant thing; that's impossible, and a contradiction of terms; on the other hand, mediocre people are always dispiriting. They know just enough to drift along with the tide. If I had my choice, and could not do good work, rather than be a mediocre man I would do something so bad, so very, very bad, that it would attract attention. I would avoid the dead level of the commonplace. I would escape the thralldom of the mechanical. I would fly from the slavery of the prosaic. There is no more dreary sight in this world than to view a mediocre man, satisfied and serene in his sleep. I want every one to consider these things and strive to make his or her work of permanent value."

There was no evening session. On the last day of the convention there was a short business session, at which the judges announced the prize winners, and a number of speeches were made.

The opening announcement was from Manager C. O. Lovell, of the Standard Plate Co., manufacturers of the Climax dry plate, which had offered the prizes. He handed the list to President Schneider, who read that the judges had been Core, of Cincinnati; Bridgen, of Cleveland, and Altman, of Buffalo. The prizes awarded were as follows: Class A, Davis & Sanford, of New York, \$100; P. O. Scott, of Chicago, \$25. Class B, George Nussbaumer, of Buffalo; Bateham, of Norwalk, O.; Bowersox, of Dayton, O.; Stout, of Unionville, and the University Studio, of Chicago, \$25 each. Class E, landscape, Chandler, of St. Albans, Vt.

Secretary Hayes read the request of the combined authorities of St. Paul and Minneapolis, that the convention come there, and Colonel Speck, the smallest photographer in the country who, when he stood upon the table, was but a little taller



than the Secretary, was called to the platform and mounted upon the table. He sprung a premature boom for Chautauqua as the next place of meeting.

Eldredge Stanton, of Toronto, when nominations for a place of meeting were called, boomed Chautauqua; Miller, of New York, spoke a good word for Brighton, Staten Island, and Reichenbach wanted them to go to Rochester, N. Y. Miller withdrew Brighton in favor of Rochester, and then Heatherington carried the day for Chautauqua by a good speech on the natural advantages of the place, and said the idea of going there was to form a home where the photographers could hold their conventions every year and have a place to show the practical working of their art. The vote showed 161 in favor of Chautauqua, as against 23 for Rochester, and one each for Cleveland, St. Paul and Chicago.

The ladies of the audience wanted to "visit," and they kept up such a constant talk that nothing else could be heard, and then some strong-lunged man was constant in his shout that "All who want to go to Scotten's must come now," and the convention was in an uproar. President Schneider swung his right arm and pounded the table, but this did not bring order until Pirie MacDonald told them he had a pleasant duty to perform, and the idea of MacDonald performing a pleasant duty was so novel that they all stopped to listen. MacDonald worked off a neat little speech he had studied over night, and ended it by presenting Treasurer Rosch with a diamond set sapphire scarf pin. Rosch thanked his friends and MacDonald started again by another speech, and he evidently thought he was back in Albany, for he worked in a boom for Hill by saying he was a Hill Democrat, and some half dozen or more smote the floor with their feet in approval of the sentiment. This speech was one of presentation to retiring President Schneider, and the gift was a very handsome onyx clock with a bronze figure on top. Schneider was nonpulsed for some time, but managed to say something.

This ended the presentation business, and then came a long wait for the judges' decision, as it was announced that they wanted to review the work they had spent all day yesterday in going over, and it took them all the morning to do it. While waiting for this the crowd took in the pictures, and Rosch sprang the statement that it had been arranged to leave the photographs in position in the gallery two weeks, that all the people of Detroit might have an opportunity to see them, and that he hoped all the exhibitors would leave them, as the majority had promised to do.

The following is the complete list of prize winners:

Special prize, silver cup for the best illustration of a scene from Ella Wheeler Wilcox's poem, "Maurine," S. L. Stein, of Milwaukee.

Genre prize, diamond charm, best three pictures of 13 inches or more in size, Stein, Milwaukee; Klein, of Milwaukee, received a medal for second best display.

The grand prize, bronze figure piece, 36 pictures, 12 cabinets, 12 Paris panels and 12 13 inch pictures, W. M. Morrison, of Chicago.

Class A (Sixteen pictures, six pictures, 16 inches or larger). One gold medal, one silver, one bronze and one diploma, W. J. Root, Chicago; Pirie MacDonald, Albany; Huntington & Clark, Detroit; Arthur & Philbrick, Detroit.

Class B (Twelve pictures, Paris panels). Pirie MacDonald, gold medal; Huntington & Clark, Detroit, silver medal; Brigden & Geisler, Cleveland, bronze medal; Somers, Memphis, diploma.

Class C (Twenty-four pictures, cabinets to Paris panels). Root, Chicago; MacDonald, Albany; Brigden & Geisler, Cleveland.

Class D (Rating competition, 12 pictures only). Bateham, Norwalk, O.; Seavey,

New Castle, Penn.; Siebolt, Flint; Spellman, Springfield, O.; Sparks, Sioux City, Ia.; Carlo, Newport, Ky.

Class E (Landscape photography). E. C. Berryman, West Superior; A. Fanjoy, Sault Ste. Marie.

Class F (Landscape photography with figures introduced). F. M. McCreary, Knoxville, Tenn.

Class G (Interiors). Kimball, Concord, N. H.; Seavy, New Castle, Penn.; G. H. Fowler, Charlotte.

Class H (Marine views). A. Fanjoy, Sault Ste. Marie; D. J. Berryman, West Superior.

Class I (Combination pictures, size at discretion of exhibitor). Arthur & Philbrick, Detroit; E. Decker, Cleveland. There were two other prizes, but the class evidently did not fill.

Class J (Composition groups). Arthur & Philbrick, Detroit; McMichael, Detroit; Van Loo & Torst, Toledo; Minns, Akron, Ohio.

Class K (Commercial work). John Betz, Baltimore; C. R. Baker, Detroit; McCreary & Branson, Knoxville, Tenn.; J. B. Schriever, Emporium, Pa.

Class L (Most tastefully arranged exhibit). Pirie MacDonald, Albany.

Class M (Best improvement of photographic appliances). Newcomb flash light machine.

Class N (Best foreign exhibit). Gabriel Lutz, Munich; L. W. Kurtz, Weisbaden, Germany.

After the prizes had been given out the convention adjourned for the year. The delegates spent the afternoon and evening in a boat ride on the river and lake, visiting Rushmere and the Star Island House. Everybody acknowledges that this convention has been the best the Association ever held.

Regarding the exhibits, W. M. Morrison, of Chicago, who competed for the grand prize, had an exhibit comprising portraits of celebrities. They were striking in their artistic attitudes and particularly effective in the matter of lighting and novel effects. This was especially noticeable in the heads of his subjects.

S. L. Stein, of Chicago and Milwaukee, exhibited in the genre and special classes. Three of his pictures, "After the Bath," "Prelude" and "Intermission," were especially fine. It would be hard to conceive of an improvement in any of them. "Intermission" has been pronounced by competent judges one of the best things ever exhibited at these conventions. In his illustration of "Maurine," he took for his idea the lines, "While she spoke my heart writhed in me, praying she would cease." His selection of subjects fitted to perfection the characters as given in the poem. A diamond badge is offered for the best illustration of this poem.

George H. Hastings has also entered for this competition, taking for his idea the lines, "Maurine, Maurine, 'tis 10 o'clock, arise," and, in the opinion of your correspondent, should have received the prize. Robertson, of St. Louis, is a young man in the business, but is rapidly making his mark. Huntington & Clark, Detroit, had a large exhibit which would be a credit to any city, both posing and lighting being excellent. The head of an old Turk is one of the best. Decker, of Cleveland, had some fine figure work and a unique exhibit of combination photographs. Minns, of Akron, O., had a most meritorious exhibit, comprising an excellent combination of ladies' heads and a very pretty combination picture, entitled, "A Banquet." Root, of Chicago, had some large full figure pictures, the posing being remarkably easy and graceful.

Macdonald, of Albany, is a young man, but his work exhibited here fully sustains the reputation he made at St. Louis a year ago. There he carried off the

Cramer silver cup, valued at \$325, and one silver and two gold medals. Up to that time he had not been thought of as a close competitor. His exhibit is one of the most tastefully arranged in the hall, each picture, from cabinet size up, having a neat gold frame. They are all on isochromatic plates, specially made to give true color values, and the rendering of the white draperies is remarkable.

The picture that attracted immediate attention on entering the Ohio salon was "Stilling the Storm," a photograph taken from life and at night, with the aid of a flash light, giving an almost infinitesimal exposure. A woman clothed in light draperies is seen sitting on a pinnacle with a musical instrument on her knee, the hair and draperies blown about by the wind, while below and in the background are seen glimpses of a large city. An electric fan has been used to give the wavy appearance to the hair and drapery.

This is the work of the Baker Art Gallery. Another of their pictures is a new conception of Charlotte Corday. Instead of appearing behind a grated window she is leaning forward on a rough table with her hands clasped.

Hollinger's work has also created a sensation among the photographers for what they call its "flesh values." His portrait of an old lady is particularly excellent, every line of the careworn face being exquisitely brought out. All his work has a character of its own, and is easily recognized.

Brigden & Geisler, of Cleveland, are particularly happy in their lightings. Their pictures are bold and strong, without sacrificing any of that mellowness which is so desirable. Their exhibit comprises everything from cabinet size up to 20 x 24. Some of their pictures have been mistaken, even by photographers, for carbon prints.

Class K includes all kinds of commercial work. This is a branch of the photographic business that the general public has little idea of, yet the galleries devoted to it are among the largest consumers of photographic materials. In this class the principal exhibitors are John Betz, Jr., of Baltimore; J. B. Scriver, of Emporium, Pa., and C. Russell Baker, of Detroit.

The Nepera Paper Company had a fine exhibit at the convention, consisting of pictures by Moreno and other noted photographers on their platinoid-bromide and ordinary bromide papers. A large photograph by Rudolph Eickemeyer, Jr., entitled, "Home, Sweet Home," was greatly admired and showed what could be done with the paper. The company also showed prints made on their new velox paper, which prints 500 times quicker than albumen paper, and can be developed and toned by full gaslight or subdued daylight. This will prove a boom to amateur photographers who are busy during the day.

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### ANSWERS TO CORRESPONDENTS.

"SHYLOCK."—In reply to your questions we should say that your trouble is either caused by a *weak* developer, or possibly an unsafe red light in your dark room, or both. Your plates are *surely* not flat from over-exposure. Test your lamp by taking a fresh plate, covering one-half of the same with black paper and exposing the plate to the lamp for ten minutes; then develop. If there is a trace of fog on the exposed half, your light is unsafe. If both halves are equally fogged, your plate is no good. While developing keep your plate away from the light as much as possible. See to it that your developer is made up *exactly* according to formula. In case you do not succeed, let us hear from you.—[EDITORS A. A. P.]

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## Editorial Table.

### **The Exhibit of the Nepera Chemical Company's Products at Detroit.—**

The most remarkable display of what is being done with bromide paper was the exhibit of the Nepera Company, at the Detroit Convention, held August 3d to 6th. Part of the display included several fine Nepera prints which were shown last year at the St. Louis Convention, and which were exhibited again this year in order to show the great permanency of prints on Nepera paper. This set of prints appear just as fresh as the day they were made.

Mr. Moreno, of New York, the well-known photographic artist, also exhibited some magnificent prints, large size and cabinet size, on Nepera paper, and is a steady user of it.

Mr. Dillon, of Philadelphia, exhibited some beautiful enlargements on Nepera platinoid paper, which do credit both to the paper and to the photographer who made the prints. There are also exhibited some very large enlargements on different kinds of bromide paper from Moreno's negatives. Some of them were toned sepia in hypo-alum and are easily mistaken for albumen prints were it not that their size was extremely large. The platinoid display was remarkable on account of the exceedingly artistic quality of the prints, which cannot be distinguished from platinum. Some of them are toned sepia.

But the most interesting display was their entirely new product called "Velox" paper, a paper which prints by the same light 500 times quicker than albumen, and, notwithstanding that, is developed and toned in subdued daylight. The prints, both matt and glossy, show conclusively that any variety of tones can be obtained, and the results are most extraordinary. This paper does away with the endless bother of all printing-out papers, and makes the work of the photographer independent of the weather conditions.

Part of the exhibit marked "Photography by the mile" shows what has been accomplished lately by the Automatic Photograph Co., of New York, by automatic printing, as is explained on page 407. Miles of Nepera bromide paper have been printed and developed automatically, and prints have been turned out by the million, from cabinet size up to 20 x 24, and the results as shown by the exhibit are so perfect and so uniform that it is hardly to be believed that they are made automatically, were it not that several strips of prints twenty-five inches wide and more than one hundred yards in length were shown. These strips are only portions of big rolls which measure as much as 500 to 600 yards in length. These results speak both for the skill of the Automatic Photograph Co., and the excellent and uniform quality of Nepera bromide paper.

The relative permanency of silver prints on several kinds of printing-out paper was illustrated by two frames, showing the action of hydrogen sulphide on prints made on the following papers: Albumen, gelatine (combined bath), collodion (combined bath), collodion matt (gold and platinum toning), Nepera and Velox paper, and the result is very convincing and speaks highly in favor of the permanency of Nepera and Velox paper.

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**California Camera Club.**—An illustrated lecture, entitled "The Dreamland of Shakespeare," was given by W. Greer Harrison in the Metropolitan Hall, San Francisco, on the evening of August 7th, before a large audience. When half through, the audience was entertained during an intermission by a bass solo by C. L. Parent, Jr., of the same city.

Mr. Harrison's views included pictures of the old and newer cottages and scenes about Kenilworth Castle.

### THIRD ANNUAL "AMERICAN AMATEUR PHOTOGRAPHER" LANTERN SLIDE COMPETITION.

For the best set of six lantern slides we offer one silver and one bronze medal in each of the following classes:

- I. Landscapes.
- III. Genre studies.

- II. Marine pictures.
- IV. Architecture.

#### Rules

RULE 1.—Entries may be made in any or all of the different classes, and must consist of six slides for each set entered, sent prepaid.

RULE 2.—Both the original negatives and the slides must be the entire work of the competitor.

RULE 3.—No competitor will receive more than one prize in any single class.

RULE 4.—The size of the slides should be  $3\frac{1}{4} \times 4$ , or  $3\frac{1}{4} \times 3\frac{1}{4}$ . When viewing the picture in its natural position the label containing the title must be to the right, and the thumb label on the lower left hand corner.

RULE 5.—Sets receiving the awards will become the property of the AMERICAN AMATEUR PHOTOGRAPHER, and will be loaned to the principal photographic societies. The remainder will be returned at the expense of the competitors, *if so desired, in writing.*

Entries close November 1, 1895.

English competitors will please send their-sets to S. L. Coulthurst, Esq., 78 Collyhurst street, Manchester, England, before Oct. 10, 1895.

American competitors will send their slides to Alfred Stieglitz, 162 Leonard street, New York.

### United States Photographic Patents.

*April 30.*

538578. Photographer's Flash Light Apparatus. W. B. Farwell, San Francisco Cal.

538616. Mount for Photographic or Other Similar Objects. E. W. Lundahl, Somerville, Mass.

*Design Patent* 24158. Card Mount. J. P. Odgers, Philadelphia, Pa.

*May 7.*

538736. Magazine Camera. J. Marchall and L. Joux, Paris, France.

538806. Magazine Camera. C. P. Whittington, Janesville, Wis.

538814. Treating Photographic Negatives J. A. Bisbee, Chicago, Ill.

538946. Photographic Camera. M. Bauer, Greenville, N. J.

*May 14.*

538368. Process of Making Negative Plates. W. S. Phillips, Seattle, Wash.

539077. Flash Light Mechanism. M. M. Newcomb, Salt Lake City, Utah.

539135. Frame for Pictures. M. C. Julien, New Bedford, Mass.

539370. Lens. H. H. Turner and J. C. Reich, Rochester, N. Y.

*May 21.*

539557. Photographic Plate Holder, M. A. Stübel, Dresden, Germany.

539713. Photographic Film Roll, S. N. Turner, Boston, Mass.

*May 28.*

539848. Machine for Coating Paper With Emulsion. C. B. Woodward, St. Louis, Mo.  
540011. Folding Mirror Album, etc P. Wiederer, Stapleton, N. Y.  
540122. Lens. H. D. Taylor, York, England.

*June 4.*

540414. Collapsible Magic Lantern. A. Wrench, London, England.  
540434. Camera Stand. A. W. Gilfillan, Ferndale, Cal.  
540545. Series Photographic Camera. R. D. Gray, New York, N. Y.  
540611. Stand for Supporting Cameras, etc. W. H. Fisher and R. P. Palmer, Bond Hill, Cincinnati, Ohio.

*June 11.*

540660. Picture Exhibitor. N. E. Hansen, Decatur, Ill.  
540964. Photographic Plate Holder. B. J. Edwards, London, England.  
541006. Photographic Camera Vignetting Attachment. R. S. Peck, Taylorville, Ill.

*June 18.*

541186. Magazine Camera. H. Smith, London, England.  
541188. Magazine Plate-Holder. A. Tournier, Lyons, France.  
541423. Roll Holding Camera. W. H. Crane and John R. Hickman, Philadelphia, Pa.

*Trademark* 26,715. Platinite, Chemicals for Use in Photography. E. and H. T. Anthony & Co., New York.

*June 25.*

541503. Photographic Trimming or Cutting Machine. C. L. Razoux, Boston, Mass.  
541506. Photographic Printing Frame. C. R. Schilling, St Louis, Mo.

*July 2.*

541832. Magazine Camera. M. Boelte, Los Angeles, Cal.  
541836. Translucent Picture. A. Von Cotzhausen, Milwaukee, Wis.  
542113. Photographic Album Support. G. Schwab, New York, N. Y.

*July 9.*

542321. Method by Which Pictures Projected Upon Screens by Magic Lanterns are Seen in Relief. J. Anderton, Birmingham, England.  
542334. Roll-holder Camera and Picture Exhibitor. W. V. Esmond, Chicago, Ill.

*July 16.*

542756. Combined Centrifugal Emulsor and Separator. M. Ekenberg, Stockholm, Sweden.  
542764. Photographic Shutter. L. J. R. Holst, Amsterdam, Netherlands.  
542785. Producing Colored Gelatine Pictures. F. Thuringer, Nuremberg, Germany.  
542887. Camera Swing-back Adjuster. H. J. Hall, Wickford, R. I.

*July 23.*

543009. Attachment for Magic Lanterns or Stereopticons. C. Goodyear, Jr., New York, N. Y.

*"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 388, Vol. VII*

strontium varies, for the two latter substances about thirty hours. The sulphide of calcium (Phosphorous of Canton) is one of the constituents of the luminous paint. Being little soluble, should be selected for experimenting. To prepare the phosphorescent film, a thick coating of this substance is applied to a sheet of paper with gum arabic, and the paper well dried before the fire. It is then placed on a transparency and exposed for an instant to sunshine or the magnesium flash light. When in the dark, a luminous image of the most singular effect will appear. There are other methods to obtain phosphorescent photographs by the dusting on process.

**PHOSPHORUS, P. 30.96**—Phosphorus in the state of phosphoric acid is contained in the ancient unstratified rocks and in the lava of modern origin. As these disintegrate and crumble down into the fertile soil, the phosphates pass into the organism of plants and ultimately into the bodies of the animals to which these plants serve for food. The earthy phosphates play a very important part in the structure of the animal frame, by communicating stiffness and inflexibility to the bony skeleton. Brandt, of Hamburg, discovered phosphorus in 1669, obtaining it from lime. It is now prepared from thoroughly calcined pulverized bones, mixed with two-thirds their weight of sulphuric acid diluted with a considerable quantity of water. Phosphorus when pure resembles very much in appearance imperfectly bleached wax. Soft and flexible at common temperature. Melts at  $111^{\circ}$  F., and boils at  $536^{\circ}$  F. Insoluble in water, it is usually kept immersed in that liquid. Dissolves in oil, native naphtha, and especially in carbon bi-sulphide. When set on fire in the air, it burns with a bright flame, generating phosphorus oxide. Exceedingly inflammable, the heat of the hand will sometimes ignite it, and therefore demands great care in its management. A very remarkable modification of this element is known as amorphous phosphorus, discovered by Schröoter. When exposed for fifty hours to the temperature of  $464^{\circ}$ – $482^{\circ}$  F., it becomes red, opaque and insoluble in carbon bi-sulphide, of sp. gr. between 2,089 and 2,106. It is not luminous in the dark at ordinary temperature, but when heated to  $500^{\circ}$  F. it is reconverted into ordinary phosphorus. Phosphorus unites with hydrogen, chlorine, oxygen, nitrogen, sulphur and selenium, forming compounds. There are three distinct substances, to each of which the term phosphoric acid has been given—meta-phosphoric acid,  $H_2PO_3=30$ , phosphoric acid,  $H_4PO_4=98$ , pyro-phosphoric acid,  $H_4P_2O_7=178$ , as its name implies obtained by driving off the water by heat, and also phosphoric or ortho-phosphoric acid,  $H_4PO_4=98$ . Same as the second mentioned. See acids.

**PHOTO-CHLORIDE PAPER**—A few trials with the test pieces found in each box of the Harvard paper will give the correct time of exposure for enlarging with the light to be used after the negative is in and focussed on the easel, ready for the large paper. In the proper time of exposure lies the secret of success. The exposure will vary according to the intensity of the negative and the quality of light. For contact printing, a thin over-exposed negative should be printed by a weak light, one with strong contrasts by a powerful light. An exposure of one or two seconds by diffused daylight, or 10 to 30 seconds at one foot from a strong oil lamp or gas. The developing formula recommended is (1) oxalate of potash, 1 lb., hot water, 48 ozs., acetic acid 3 drachms. (2) Proto sulphate of iron, 1 lb.; hot water, 32 ozs., acetic acid,  $\frac{1}{2}$  drachm. (3) Bromide of potash, 1 oz., water, 1 quart. To develop, take of No. 1, 6 ozs., No. 2, 1 oz., of No. 3 (if desired) 5 to 20 drops. Always add No. 2 to No. 1. No. 3 will change the tone of the print from a dark gray to a beautiful sepia brown, according to the amount used. After exposure soak the paper in water until thoroughly wet, then pour off and flow on the developer as evenly as possible. If no bromide has been used the print will appear at once, when the developer must be poured off quickly and the development stopped with a few ounces of the following: Acetic acid, 1 drachm, water, 1 quart; two or three rinsings with the acid water will be sufficient, then rinse with clear water and immerse for five minutes in the clearing bath. Hypo., 4 ozs., water, 1 quart, drain thoroughly and wash in ten changes of water for 30 minutes and hang up to dry. Keep everything clear from hypo. Prints on smooth paper may be mounted dry by pasting the backs with thin starch paste and rubbed into contact with a piece of clean paper.

**PHOTO-CHRONOSCOPIC METHOD**—M. Gustave Hermite places the object to be examined in obscurity and lights it by means of an electric spark, obtaining instantaneous images perceptible to the eye with a sharpness impossible to obtain by mechanical means. In order to measure the velocity of the motion of objects examined by this process, it was necessary to solve the problems: 1. Produce sparks at exactly regular intervals. 2. Measure exactly the interval of time between the explosions of the spark. He solved the first problem by using Ruhmkorff's coil furnished with its hammer, and the second by using a diapason, the number of vibrations of which is exactly known. The diapason consists of a thin plate of steel of a determined length and fixed in a metallic handle.

**PHOTO-ENAMELING PROCESS**—(N. C. Thayer & Co., Chicago.) Gives very fine re-



sults. Five separate solutions are to be prepared : (A) Plain collodion : alcohol, 12 oz., ether, 20 oz., gun cotton, 1 oz. (B) Chloride of strontia, 80 gr., chloride of lithium, 80 gr., citric acid, 300 gr.; dissolve them in a mortar in as much alcohol as will make the whole 6 oz. (C) Nitrate of silver, 437 gr., hot water, 5 drchm.; dissolve and add slowly alcohol to make 5 oz.; the silver will partially recrystallize after standing; redissolve by placing bottle in a pan of hot water. (D) Castor oil, 4 drchm., ether, 8 oz. (E) Glycerine, 4 drchm., alcohol, 8 oz. To make emulsions, take 6 oz. of (A), add to it 6 drchm. of (B), filter into this 12 drchm. of (C), shaking well all the time. Add to this  $\frac{1}{2}$  oz. each of (D) and (E), and shake thoroughly. If desired, this emulsion may be colored by the addition of one or two drops of a combined solution of violet and magenta aniline dyes. Should the prints ever appear rusty in the shadows, add a little more of (C) solution, as the emulsion must be too weak in silver. When the prismatic rays show on the paper when dried, the emulsion is too thin, and needs a little more cotton added to it. When negatives are thin, a better emulsion for such is made by using 4 drchm. of (B) instead of 6. For negatives that are dense, more of (B) must be used, also an increased proportion of (C). After coating each sheet of paper, add 1 drchm. of ether to the emulsion. This will break up air bells and make up for evaporation. The amount required to coat a sheet of paper 20 x 24 is  $1\frac{1}{2}$  oz. Should more be left on the paper, it is thicker than necessary, and may be thinned with ether, to such a consistency as will only take that quantity. The toning bath : Water, 8 oz., hypo., 40 gr.; dissolve 15 gr. chloride of gold in 2 oz. of water and add to the hypo. solution; then 75 gr. of nitrate of lead, dry, is also added. Tone the prints without previous washing. When they tone too fast, they should be placed in an ordinary clearing bath for a few minutes. When they are in the toning bath for 11 minutes or over, they will be fully toned and cleared. When they tone too slowly, add a little fresh toning solution. The toning bath may be used for some time by strengthening it from stock solution. After toning, immerse for one minute in an ordinary clearing solution with a little salt added. From this on, wash and treat the same as albumen prints.

**PHOTO-ENGRAVING**—It has been only until very recently that the methods of illustrating books have kept pace with the numerous improvements made in the art and style of printing. But when photography was called in to assist, the advantages were at once recognized, and since then the strides made in this branch of industrial art have been phenomenal. Books, magazines and even newspapers attest this. New improvements and new

processes are announced almost daily in the various photographic journals, and frequently in the general press besides. It is impossible to give here even the names of the various processes employed almost daily. Typical processes will be found mentioned under appropriate heads throughout the index. The best book on the subject published is Wilkinson's *Photo Engraving*, etc., revised and enlarged by the veteran, Edward L. Wilson, New York.

PHOTO-ETCHING—See Etching.

PHOTOGRAPHY—Is first : The science of the action of light on bodies ; the principles of physics and chemistry which relate to the production of pictures by the action of light. Second : The art of producing pictures of objects by the action of light on chemically prepared surfaces such as silver, glass, paper, etc.; or the art of receiving and fixing on such surfaces the images formed by the camera. If we use the term in a more restricted sense, the art of producing such pictures on chemically prepared paper. The following brief sketch of the rise and progress of the art may be of interest to some. In the latter part of the sixteenth century, Jean Baptiste Porta discovered that the rays of light passing through a small hole in a shutter projected upon a white screen the objects outside reversed. Enraptured, he placed a convex lens in the aperture in his shutter, and then catching the image upon a mirror, reversed it, from which experiments he was led to invent the camera obscura. Fabricus, searching for the Philosopher's Stone, discovered chloride of silver. Spreading some of it upon a flat surface he noticed that any image projected upon it by means of his lens was imprinted with all the gradations of Nature, translated into blacks and grays. In 1760 Niphaine de la Roche, a native of Normandy, was told by the genii that a certain subtle ingredient spread upon canvas would secure images from Nature cast thereon and fix them. Scheele, the famous Swedish chemist, discovered that chloride of silver was much more sensitive to the rays of blue and violet in light, than it was to those of red and green. Prof. Charles, in a course of lectures, in 1780, projected by means of a strong solar ray a shadow of the head of one of his pupils upon a sheet of white paper, which had been soaked in a solution of chloride of silver, and secured a silhouette in white upon a black ground, but the picture disappeared on exposure to light. In 1802, Thomas Wedgwood, son of the famous potter, published an account of his researches in the *Journal of the Royal Institution* under the title, "An Account of a Method of Copying Paintings Upon Glass and of Making Profiles by the Agency of Light Upon Nitrate of Silver, with Ob-

servations by H. Davy." In the experiments detailed in this communication, white paper and white leather were coated with nitrate of silver and exposed either in the camera obscura or under the leaves of trees or wings of insects. The result was that the shadows preserved the parts concealed by them white, whilst the other parts became speedily darkened. The misfortune was that no attempts, made either by Wedgwood or Davy, to prevent the uncolored portions from being acted upon by light (or, as we now erroneously say, to fix the picture) were successful. This operation was not effected in a thoroughly efficient manner until Sir John Herschel suggested the employment of hyposulphite of soda for that purpose. Many other agents had been previously used, as ammonia, iodide of potassium, chloride of sodium and bromide of potassium, suggested by Fox Talbot. None of these, however, were found equal to the salt proposed and used by Herschel. M. Niepce, of Chalon on the Saone, was the first to enjoy the satisfaction of producing *permanent* pictures by the influence of solar radiation. This was accomplished in 1814, and the name chosen to designate his process was heliography, a name in some respects preferable to photography. It consisted in coating a piece of plated silver or glass with a varnish made by dissolving powdered asphaltum to saturation in oil of lavender, taking care that the drying and setting of this varnish be allowed to take place in the entire absence of light and moisture. The plate so prepared was then exposed in the camera obscura for a length of time varying from four to six hours, according to the amount of light. A faint image only is at first visible, and this is afterwards developed and fixed by immersion in a mixture of oil of lavender and oil of white petroleum, the plate being finally washed with water and dried. Light has little or no action on these heliographs. They should, however, be protected from moisture. Daguerre improved on this process by the use of the resins obtained by evaporating oil of lavender, whereby a great increase of sensibility was secured. Adopting date of publication as the best evidence of discovery, the next process offering itself for consideration is that for photogenic drawing, by Mr. Henry Fox Talbot, communicated to the Royal Society on the 31st of January, 1839, just six months previous to the publication of Daguerre's process. It consisted in immersing carefully selected writing paper in a weak solution of common salt and drying it. After this, a dilute solution of nitrate of silver was spread over one side and the paper again dried at the fire. When dry it was fit for use, the sensitiveness being much increased by alternate treatment with saline and argentic solutions. Paper thus prepared yielded impressions in (then) an incredibly short time and "nothing could be more perfect than the images it gave of leaves and



BY ALFRED STEIGLITZ.

"OUTWARD BOUND".

# THE AMERICAN AMATEUR PHOTOGRAPHER,

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## Definition and Diffraction Photographs.

BY GEORGE DAVISON.

IN a previous issue (December, 1894) I ventured to renew and press the claim for freedom for the artist-photographer in methods of focusing and in any photographic practices for securing the effect or feeling of such subjects as he considers sufficiently distinguished and characteristic to justify his choice and work.

It was argued that in the interests of individuality and originality, the mechanical conventions, generally sold or imparted with the early camera and the first text-book, should, in artistic work, be disregarded, and that personal choice and preference,

both in selections and in methods of representation or expression, should be paramount. The article concluded with an enumeration of some practical points in connection with obtaining different kinds of softness in our photographic pictures, where such may be held to be desirable or helpful in giving an effect as we see it or wish it to be seen.

Some one or two of these practices may deserve and require further explanation and directions, and a few notes at the end of this article upon one of the most popular, may perhaps be of interest. But before passing to these practical details, a brief excursion into a theoretical side path may be permitted, to again meet the enemy who denies the right of freedom in focusing to the photographer.

Taking the case of the most dignified and honest of the hostile utterances on the subject, we find it suggested that uniformly minute delineation is the natural characteristic of photography, that detail and sharp definition are the special powers of our instruments, and that these special powers should be utilized to the utmost.

Further, it is objected that artistic effects are better produced by other means ; that the men who prefer softness and diffusion to sharp focussing in pictorial work are being misled by imperfect analogies ; that anything like photographic impressionism is an impossibility, and that the painter may suggest and merely indicate, and so leave scope for the imagination, but the indistinctness in a photograph can only conceal and stifle imagination.

Now, to me, this is just simply the attitude of those who, whilst compelled by circumstances to say something about the art in photography, have, in reality, all their strongest sympathies in the science. Being more absorbed by important science work, they do not look at the question from the point of view of those who have tried and have given themselves up to the art view. They do not see that a striking characteristic of photography is its universality of application, whether to science, art or industrial work. The power of minute delineation is only one characteristic of photography, and is purely a function of the lens used. The proper application of this quality is in certain scientific investigations, and not in rendering an effect of light upon a landscape, or the expression rather than the skin of a portrait. The painter and draughtsman could, if they wished, always paint and draw much sharper and with greater detail than they do, but they do *not* wish, because it enhances the force of their general impression to suppress many details.

Indeed, it is an undoubted fact that a draughtsman, if he sets himself to it, can work in more detail in any given area of a representation than the photograph of the subject shows. The characteristic of photography is not the power of minute delineation, but the ease with which, at one blow, its power of correct drawing can be applied and the work done.

It is difficult to conceive why a photographer should not be permitted, similarly to the painter, to work up to his impressions of a lovely scene. The contentions quoted really mean barring photography altogether from any attempts at artistic pictures, for the essence of the art is personal freedom ; freedom in selection, personal treatment in focusing, exposure, development and printing. The attitude of such a critic as has been quoted seems to imply that, whilst all possible thought and care may be brought to bear as regards arrangement and lighting, no freedom, no thought, no care should be permitted or given in the matter of focusing, but that only the best opticians' best scientific lens should be the arbiter and art master.

Notice further the unfairness and confusion in the idea that whereas indistinctness with the painter leaves scope for the imagination, indistinctness in a photograph conceals and smothers it. Such a view can

only be derived from the observer knowing and seeing what he, as a scientific expert, *could* have made some lens do in any such subject, instead of giving himself up to see and know what was the general effect desired by the artist. It seems to come to this, that whilst each individual has the right to claim any version as *his* impression of a scene, it would be as well for all who are interested to inquire whether each method of treatment has not its own special qualities, as well as deficiencies. There

"THE FLOWER STALL."

By J. Craig Annan.

is no one natural method. Definition of focusing is as much a matter of relative treatment as is that of tone values.

My own view, at the present time, is that general effect and particular detail do not marry well, and are rarely if ever happily wedded. One must be sacrificed to the other. But whilst preferring what I should term the larger qualities of pictures, there still should be no difficulty in understanding and accepting the possibility of many others getting their keenest enjoyment from the fullness and beauty of detail in carefully a ranged works.

Turning now to one of the practical points enumerated at the end of



my previous article, it is perhaps unnecessary, in view of the directions frequently published, to say much concerning the use of pinhole apertures used in place of a lens, either for landscapes or for copying. It is now nearly seven years since I made what was the first exhibition of a number of examples of the method used seriously for its pictorial advantages, and, although its use is naturally restricted by the long exposures required, I still find that when applied to its proper subjects it has its distinct qualities, and a softness of definition which seems to me different from that of any other method.

There are many methods of making the pinhole aperture, either in a blackened card or thin metal foil, or in brass. Thin foil may be fastened between two thin cards which have had a small  $\frac{1}{8}$  inch hole made in the middle of them, and then, or before fixing the foil, a hole may be punched in the foil by using a needle cut through at any point in its length. My own instrument consists of a bar of thin brass, having holes ranging from  $\frac{1}{16}$  inch to  $\frac{1}{8}$  inch along its length. Any one of these sizes can be brought into play by sliding the bar along in grooves until the particular hole is over the central opening, the whole being attached to a special front, and having a hood acting as a sky shade to shield extraneous rays from the opening.

Practically for use on a quarter plate, that is, at about 6 inches extension of the camera, the size of the aperture may be  $\frac{1}{16}$  or  $\frac{1}{8}$  inch, whilst at 14 or 15 inches focus,  $\frac{1}{8}$  or even  $\frac{1}{4}$  are usable. Exposure may vary from about a minute, with the 6 inches extension and  $\frac{1}{8}$  inch aperture in a fair light, to 30 minutes or upwards, according to intensity, ratio, plates, light, etc.

For judging the picture on the ground glass, the usual plan is to first focus with a lens of the focal length intended, and then remove the lens and substitute the pinhole front; but a French firm have introduced an appliance having a number of pinhole apertures of different sizes and adjoining each a small lens having the correct focal length at which the corresponding pinhole theoretically gives its minimum of diffusion. The lenses and pinholes are on a rotating disc; and one or other can be brought into play as desired. But for those who wish to make trial to secure a pleasing degree of softness on some suitable subject and who do not wish to be troubled about any elaboration, the simplest means may be made very effective; just a small opaque black card perforated by a red hot needle, No. 7 (sharp) will serve the purpose. This can be inserted in the diaphragm of a lens tube and the lenses removed.

Many of the points alluded to might be greatly elaborated, but the above gives all really necessary working details.

There are a few points of practical interest not generally noticed,

"A VERONESE VINEYARD."

BY J. VERONESE

which may, in conclusion, be mentioned. One is that with objects moving gently, such as trees waving or water swirling, the long exposure need cause no anxiety. The frequent positions of rest of the leaves of the tree and a general indication of the line of movement of the stream of water are what come out most strongly, and, in some cases, rather assist than mar the effect.

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### Photography with a Purpose.

BY MAX MADDER.

It has been stated that the present bicycling craze is the cause of many desertions from the ranks of amateur photography. Perhaps it is; but the deserters are those whom we can well afford to do without, for they can never have had any earnestness of purpose. Mere button pressers probably are the only ones we shall lose. To photograph without a purpose can never lead one to the higher ranks. While I do not wish to throw cold water upon those who are content to take up with photography simply for amusement, I would like to see them display more earnestness in their work, and to show them

higher possibilities. Snap-shotting may often afford considerable amusement and serve to occupy one's time that might possibly be wasted upon a far less worthy purpose, but at the same time I would like to be able to convince amateur photographers who photograph merely for fun, of the inestimable and far superior pleasure to be derived from more serious and higher aims.

The ordinary photograph is rarely, if ever, a picture. It might be an admirable photograph by accident, but that is no satisfaction to the photographer when his own conscience tells him that it was not he but the camera that made it.

The man with higher aims, who works, and utilizes throughout his own brains and artistic abilities, can view his finished results with a far greater degree of satisfaction. He feels that the picture is his own cre-

ation as much as the artist does with his painting. When he works with a purpose, and after hard study and conscientious work is able to realize it, the satisfaction is a million times greater than the ordinary photographer can ever hope to experience with his chance shots.

I have already pointed out that to make photographs is an easy matter—a child can do it—but to make pictures with the camera requires brains, patience and artistic ability. If you possess all these, reader, why not try to aim at something higher than the mere making of photographs. The possibilities are great, greater than you may perhaps imagine. The art of picture making with the camera is not difficult, but it cannot be learned in a day or a week, or a year, perhaps, but still it is not a difficult task, and the results are surely worth the trouble.

The serious photographer who works with a purpose takes a delight in all he does. He aims at making a picture, a single one perhaps, and with perseverance and careful thought he succeeds, possibly not without many trials and disappointments, but the feelings with which he views the result of his labors are greater than the amateur's with his album full of pictures that have no meaning, snap shots made anywhere and anyhow.

Photography has been said to be still in its infancy. When we consider how it assists the many sciences it is difficult to consider it as a child, but in many respects, and more especially when we realize the glorious possibilities, it is certainly but poorly developed.

The art of picture making with the camera is undoubtedly but little understood; in this country perhaps less than in many others. It seems curious when we think of the many thousands of photographers in America, and of the few real pictures that we see made by means of the camera.

What is the reason of this? Is it that we possess less artistic taste and ability? or that the photographers here are gifted with less patience? In these matters I think we may compare favorably with other nations, so that we must look for some other reason.

The photographer who desires to make pictures instead of photographs must first of all be prepared to sacrifice quantity to quality. He mustn't expect to make three or four dozen exposures a day, or to fill several albums full of good, bad and indifferent views. He must be prepared to be satisfied if he makes one good picture a month. Indeed, a well-known artist-photographer once told me that he was satisfied if he made *one* satisfactory picture every year, and, as a matter of fact, very few of those in the highest rank succeed in making more than this number. Of course, when I say a picture, I do not mean a photograph (they could make these by the hundreds), but something which appeals to our higher feelings, lifting us away from the commonplace, and in which we see the expression of Nature translated by the photographer according to

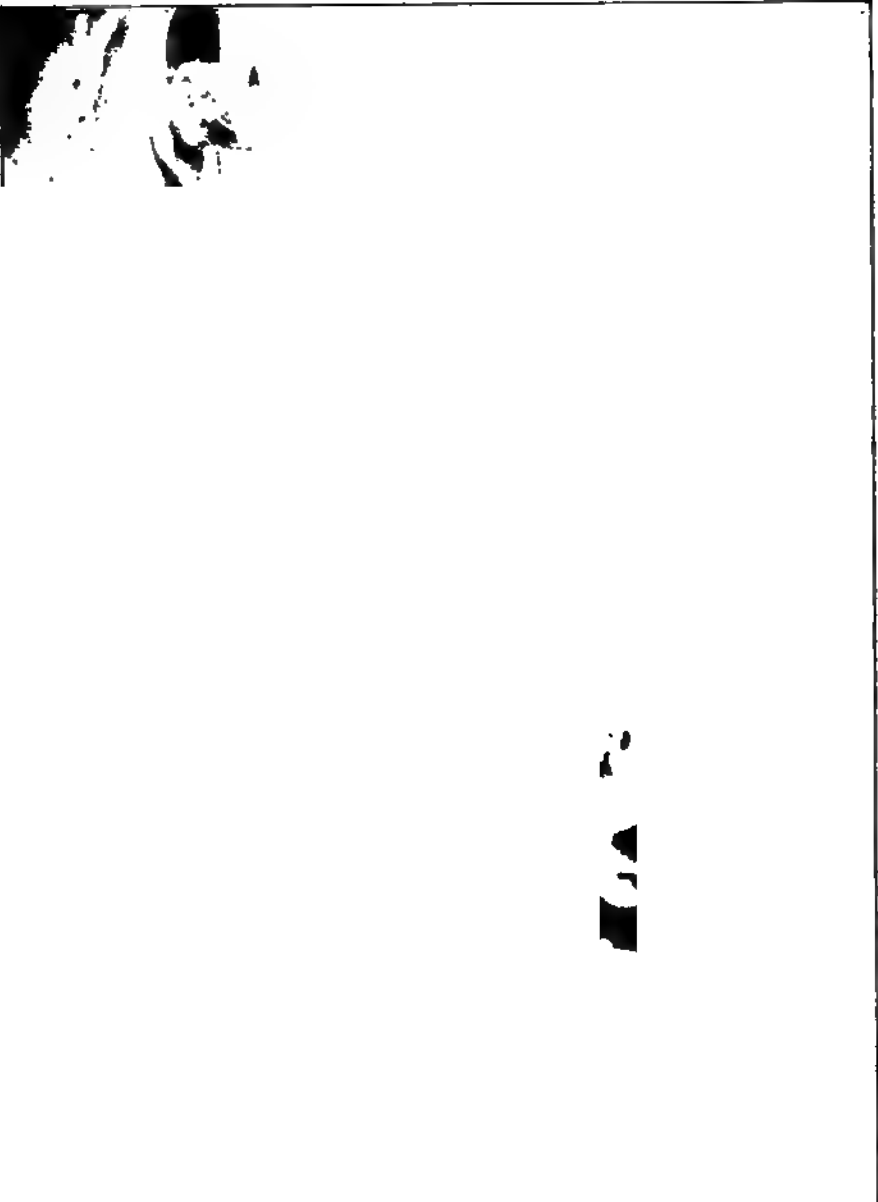
his own ideas, using the camera and chemicals only as a means to an end.

There are only two ways to take up with photography; i.e., with and without a purpose. If you are content to do it without, why, well, and good; amuse yourself with your camera so long as you are satisfied. But why not have a higher aim? It is regrettable that America is so far behind England, France or Germany in artistic photographic work. We have a few good workers, but they are so few; contrast their works with those of the ordinary amateur photographer and what a wide gulf we find between them. Is this so impassable? Many seem to think so and are afraid to venture out of the ordinary path followed by all. They are blind to the possibilities that are within their reach, and which can be realized by the exercise of a little patience and careful thought.

As I said in my last article, one must first of all learn to be independent, to think for one's self, to have an idea and to study the various requisites for its realization. The men that have succeeded are those who have thrust aside all conventional methods. One, for instance, discarded lenses and used a pin hole to transmit the rays to the sensitive plate; another attracted attention by his fine life-size head studies. The world gazed and wondered what kind of a lens could have been used to produce such fine results. It must have been a costly one, it thought. It was surprised when it heard that the lens was but an ordinary spectacle lens, costing about eight cents. It was not the instrument that made the picture; it was the man. Others again have discarded the ordinary photographic papers, and used any material that would produce the result they were aiming for. They photograph with purpose, and utilize any thing and any method, conventional or unconventional, to realize that purpose.

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**Nineteenth Annual Stanley Exhibition**, at Royal Agricultural Hall, Islington, London, N., England, November 22d to November 30th inclusive. Gold, silver and bronze medals offered in following classes: A, landscape and sea scape; B, hand camera work (4 x 5 negatives); C, figure studies, genre, etc.; D, portraiture; E, beginners who have commenced photography since January 1, 1892; F, cycling, best print taken by apparatus carried on a cycle; G, general class, such as architecture, scientific, etc.; H, special class for amateurs who have never previously gained a medal at an open photographic exposition. Set of three prints, any subject. The judges are Bernard Alfieri, A. Hawley Hinton and F. C. Lambert, well-known men in the photographic world. Address packages and letters to Walter D. Welford, Manager Photography Section, 57 Chancery Lane, London, W. C., England.



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AT THE TEA PARTY.

By A. L. Eldemiller.

## English Notes.

BY GEORGE DAVISON.

**The Autumn Exhibitions.**—We are now very close upon the opening of the autumn photographic exhibitions at Pall Mall and the Dudley Gallery. The coming torrent of criticism in the press casts its shadow before it, and we can almost hear the busy sharpening of pencils by the brave critics. It is to be hoped that the reviews will be suited to the nature of the exhibitions, and calculated to advance the best pictorial applications of the camera. We look for a strong contingent from America. One new exhibitor we know of whose work is of great merit. From Vienna a goodly contingent is on its way to be submitted for selection, and some of these pictures are produced from bromide paper negatives taken direct in the camera. We shall have something to say upon the exhibitions in our next notes.

**Revolt Against the Photograph.**—As a reaction from the epidemic of bad processed photographs in illustrated journalism, we now find it stated that certain good class journals are deciding to exclude photographs, and even half-tone process, entirely, and to revert exclusively to wood engraving. This need not be taken too seriously. Photography and process are a necessity in illustrated journalism, and they form the most valuable recording medium for most of the purposes for which the popular magazines and journals are founded. Even in such notable journals as the *Century*, wherein artistic effect receives considerable attention, out of about fifty illustrations in one issue, the July, less than a dozen wood engravings, and all the remainder, save a few line drawings, are from half-tone blocks more or less worked upon. The most effective of these, in our opinion, are the wash drawings reproduced by process, as, for instance, the striking pictures by Castaigne, wherein the effect is in parts photographically truthful, although a great quantity of work to imitate wood engraving is put upon the plates, and although there is much arbitrary and false lighting.

It is quite certain that wood engraving cannot oust photo-process reproduction. Even the very best wood engraving, as that by Timothy Cole, shows the unsuitability of wood engraving as a translator.

The whole effect is wooden. The interest in the cleverness is for experts. All handling of the original is gone. Textures are not distinguished. The conventional cut in the wood fails through its being naturally an unsympathetic and inflexible medium.

Perhaps it is in portraiture that wood engravings fail most markedly. Since the introduction of photography and process into illustrated journalism portraits therein have gained a new value and interest.

We now get glimpses of the character of the originals instead of lifeless wooden fictions. Even in so excellent an example as that in the *August Century*, opposite page 537, there is unnaturalness, due to the obstinate rigidity of the wood method; as, for example, in the clumsy representation of the left eye, eyelids and cheek.

What we want in reproductions of artists' drawings is the delightful touch and effect of the originals. In woodwork all this is chopped away and lost, except in cases where enormous labor is expended. The easy printing of the brilliant wood block is no doubt delightful to the mechanical printer, but we prefer the nature in even an imperfect half-tone reproduction.

**Simple Method of Comparing Printing Strength of Negatives**—Captain Abney suggests a method of using a photographic scale for comparing the opacities of negatives, with reference to the relative suitability of those negatives for printing in the several processes which are in vogue. It is well-known that different printing papers require different strengths of negatives to give what are called brilliant prints. For example, slow bromide paper, as usually prepared, will give a vigorous print from a thinner negative than is required for platinotype or for rapid bromide paper. This being so, it may be advisable to have some simple means of comparison of negatives, both for guidance in choice of printing process and also as a guide in subsequent development of plates.

A graduated scale may be made on a plate or a celluloid film by exposing successive small squares to a light at a certain distance, doubling the time of each successive exposure. This should be developed with ferrous oxalate or amidol or any of the developers giving pure black images having the same visual and photographic values. Having got the scale, it is printed upon the printing paper proposed to be used, until the part under the square which is bare film is as deep as the paper will print. Now the thinnest square under which the paper still retains its pure whiteness is noted, and it will be evident that any density beyond this will generally be worse than useless in a negative intended to be printed in that particular process. The point then is to judge whether that density is attained, and Captain Abney suggests a very simple dodge. Three or four dots of varying size are made on a piece of white paper, the smallest of the dots being very small indeed. These dots are viewed through the density on the graduated scale which has been found to be the standard, and their faintness to the eye or actual disappearance is noted. The part of the negative to be judged is at once substituted for the standard opacity, and comparison is thus made.

Captain Abney states that the opacity of a negative may be judged to within five per cent. by this plan.



**Enlargements or Direct Negatives.**—In discussing this subject Prof. W. K. Burton considers that one of the great objections to enlarging is the granularity of the image, which in enlarging from small negatives shows unpleasantly coarse. He objects to the device of putting the grain out of focus to soften its coarseness as giving too much fuzziness for his liking, but he recognizes that by the interposition of a smaller grain, as in a colotype or photogravure reproduction of the enlargement, the original grain is killed. We may point out that much the same effect is gained by interposing a sheet of fine grained tissue paper or other medium between the enlarged negative and its print. Mr. Burton further reminds his readers to use the slowest plate possible for the purpose in hand when enlargement is intended, and also suggests a careful selection of the brand of plates, as different makes vary very much in coarseness of grain. His ideal is a film as sensitive as our rapidest plates, and as free from granularity as a wet plate film. That being obtainable he considers it would be feasible to construct and use a small hand camera for enlarging purposes with a lens of two inches focus and aperture of one inch, and this lens should be capable of covering sharply a plate having a diagonal about equal to the focal length. With such an instrument, the distance being put slightly out of focus, everything, even at a near distance of a few feet, would be in good focus, and instantaneous work could be done in dark places and in rooms.

We may just note here that one of the defects of enlargement, in an artistic sense, is often the want of differentiation of focus, relief or concentration in subjects where such distinction is a necessity for the motive and effect. This is because the small camera work is fairly even in its definition, through the whole depth from foreground to distance even with the largest aperture of the lens in use, and the want of distinction of focus seems more noticeable still in the enlargement. Direct workers with large cameras feel the advantage of aiming straight at the qualities they desire. Hand-camera workers must train themselves to work from the outset right through with the idea of the ultimate enlarging ever present in their minds. The relation of the figures or groups in the pictures to the background and other parts of the picture, both in proportionate size and relief, is of the utmost importance. As a small matter we may say we often feel the need for a larger aperture than  $F/8$  in small hand camera work for purposes of focal relations, and quite apart from rapidity of exposure necessitated.

**Focussing with Non-Aplanatic Lenses** — On this subject Mr. Debenham revives attention to the point that with most lenses of really wide angle, and with all others having spherical aberration in sufficient quantity, it is necessary to refocus when putting in a smaller stop to that focussed

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Copyright, 1898.

"CONVALESCENT."

By A. L. Macmillan.

with. He states that as regards the alteration required with a concentric lens of 8-inch focus he found the focal plane was shifted one-eighth of an inch when changing the stop from F/16 to F/32. In another case of a lens used for wide angle pictures the use of the smallest stop shifted the focus a quarter of an inch from that given by the largest aperture.

**Uses of Telephotographic Lenses.**—One of the uses to which these lenses have been put, and actually the chief one we believe intended for them by their producer, Mr. T. R. Dallmeyer, is the photographing of wild birds in and around their nests. Mr. R. B. Lodge is said to have produced some quite marvellous illustrations in this way.

For artistic use, too, every one who has worked at landscape in low-lying districts must have often felt the need, or have seen the possible application of these lenses to secure delicate distant pictures of sunlight, mist and trees and many other similar beautiful effects.

*London, September 10, 1895.*

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## Beginners' Column.

### CHAPTER XXIII.—LIGHT AND SHADE.

BY JOHN CLARKE.

IN speaking, in a previous chapter, of gradation in a good negative, I said that although there might be an infinite number of degrees or steps between the highest light and the deepest dark, they might conveniently be reduced to five—light, half light, middle tint, half dark and dark; and this chapter I wish to show that on the suitable proportions of these and their proper distribution, depends, as much if not more than on the arrangement of lines or composition,

By Anschuetz.

the production of true pictorial effect. Composition is the skeleton or framework, and light and shade or *chiaro-oscuro* its clothing, filling up and rounding or modelling; and so important is this that many pictures accepted as of the highest order of merit—some of those of the Dutch and Flemish schools, for example, in which the drawing would be dis-

creditable to a second year student, owe their merit to its super excellence.

Robinson defines the objects of chiaro-oscuro as being, first, "to give a pleasing general effect to the whole picture by dividing the space into masses of light and shade, giving breadth of effect and preventing that perplexity and confusion incident to the eye being attracted by numerous parts of equal importance at the same time; secondly, to place before the spectator at once the principal object represented, so that the eye may first see it and be gradually and insensibly led to examine the whole picture; to keep parts in obscurity and to relieve others, according to their pictorial value; and, thirdly, to aid the sentiment and expression of the picture." According to Burnet, "Light and shade are capable of producing many results; but the three principal are relief, harmony and breadth. By the first the artist is enabled to give his works the distinctness and solidity of Nature. The second is the union and consent of one part with another, and the third, a general breadth, is the necessary attendant on extent and magnitude." Robinson omits relief in his definition as dangerous when carried too far, as in the case of an artist who painted on one of his pictures a fly in such relief that the spectator was impelled to whisk it off with his handkerchief. This was simply an exhibition of vulgarity with which the most realistic photographer could not compete, and therefore he may safely get all the relief that he can.

By harmony in connection with chiaro-oscuro is understood the uniting of the different parts of a composition by the intermediate parts, as by the links of a chain, either by lights or darks of varying intensity and size, so as to neutralize the harsh effect of the two extremes.

Breadth, on the other hand, is attained by an excess of light or dark; the former emphasizing the darks, the latter giving power and brilliancy to the whites. A quiet sunny summer scene will be found practically wanting in middle-tone, and its place supplied by half-lights, while gloomy grandeur is indicated by a large proportion of middle-tint and half-dark, the consequent absence of distinct markings in the darker parts allowing the spectator to exercise his own fancy, suggesting, as all good pictures should, more than is seen.

Although, as in the case of composition, the photographer has less control of his chiaro-oscuro than the painter, he has sufficient to make all the difference between good work and bad, and, also as in the case of composition, the more thoroughly he succeeds in taking advantage of those limited opportunities, the greater will be the credit which he will deserve.

The laws or canons applying to chiaro-oscuro are similar to those

involved in composition. The center is the weakest part of the picture, and therefore the chief light should never be very near that point. It may be above or below, but with better effect, either to the right or left. Lines of light, such as a white sandy road, or brilliantly lighted stream passing through the picture, should not, as a rule, go either vertically or horizontally, but in a more or less diagonal direction, and the same rule applies equally to the shadows. Perhaps an exception may be made in favor of the horizontal bars of light of a twilight scene when they are not too pronounced, as they give both exquisite beauty and a sense of perfect repose.

While a picture should have one principal light, just as it should have one objective point, it should never be isolated or alone, but repeated over and over again in lower and lower tones, so as to give unity and harmony—to bind, in fact, the scattered objects into one harmonious whole, and bring the wandering eye back to the main object to which all the rest are merely accessories. For this purpose the shade is of as much importance as the light, and is amenable to the same laws. The lights may be employed to lead the eye, while the shadows or darks may be so handled as to throw into the shade such objects as are too prominent, or that attract too much attention. But while the light should be repeated great care should be taken to avoid a patchy appearance arising from scattered unconnected patches, all, or most of them of equal brightness, and that they should differ in both form and size as well as tone.

Although the photographer may not have as much control of his *chiaro-oscuro* as his brother of the brush, and Nature does not pretend to be artistic, he has the power of selection, and there are but few scenes that he may want to portray that cannot, at some time of the day and under certain conditions, be found with just the light and shade that will give the desired pictorial effect. In the early days of photography, when men were intent only on the technicalities of the art, more interested in what is now somewhat absurdly called "chemical effect" than composition and light and shade, it was matter of general observation that the best pictures were taken during the early morning or late in the afternoon; the reason, of course, being that then there was a larger proportion of the shade so necessary to picture making. With the sun behind the camera the picture must necessarily be almost all lights, and before the camera just the reverse; although under certain conditions very fine effects may be obtained by the latter method, while the nearer the source of illumination approaches the vertical the more difficult it will be to get the necessary darks, as they are then dependent on shadows cast by clouds.

It has been said that a good picture should contain a little white, a

little black, and all the rest gray. Ruskin says, speaking of white: "The eye ought to seek it for rest, brilliant though it be, and not to feel it as a space of strange, heavenly paleness in the midst of the flashings of colors. This effect you can only reach by general depth of middle tint, by absolutely refusing to allow any white to exist except where you need it, and by keeping the white itself subdued with gray, except at a few points of chief lusters.

"Secondly, you must make the black conspicuous. However small a point it may be, it ought to catch the eye, otherwise your work will be too heavy in the shadow. All the ordinary shadows should be of the same *color*, never black nor approaching black; they should be evidently and always of a luminous nature, and the black should look strange among them, never occurring except in a black object, or in small points indicative of intense shade in the very center of masses of shadow."

Reynolds tells us that in studying the *chiaro-oscuro* of the old masters he was in the habit of taking a leaf from his note-book and darkening every part of it in the same gradation of light and shade as the picture, leaving the white paper untouched to represent the light, and this without any attention to the subject or drawing. A few of such experiments showed clearly the methods of the various painters, and in almost every case he found the paper blotted nearly alike, their general practice being to allow not more than a quarter of the picture for the light, including in this portion both the principal and secondary lights, another quarter to be as dark as possible, and the remaining half kept in mezzotint or half shadow.

This is a practice from the adoption of which the student would derive much benefit. In this way he should test such good pictures as he may have access to, and also such engravings in the illustrated magazines as take his fancy, not for the formulating of a fixed law, or to slavishly copy, but to get an idea of the *chiaro-oscuro* that produces the most pleasing and satisfactory effects.

But, when all is said and done, there is really no royal road to reach the higher possibilities of the arrangement of lines and light and shade, for the production of pictorial effect. That can be reached only through much patient, persevering study, observation and practice. The teacher may point out the road by which the student may most easily reach the goal, and for that purpose nothing that I have come across is better than Burnet's *Essay on Composition, Light and Shade, and Education of the Eye*, but the student must for himself observe, study and practice, and he will find, as others have found before, that he who studies most will be the most successful artist.

## Portraits, Etc., in Watch Cases.

BY GEO. E. BLACKHAM, M. D., DUNKIRK, N. Y.

**I**T HAS become quite a rage, in some places, to have the inner case of one's watch decorated with a portrait of particular friend or relation, and the jewelers have been reaping quite a harvest in having these portraits put on the polished metal at rates varying from five dollars upward. There are many methods by which this can be done, the most perfect and permanent being the enamel process, by which a picture in vitrifiable pigments is actually burned in. This process requires a large amount of skill, patience and special appliances, and, when well done, is worth a good price, but results closely approaching it in appearance, and practically sufficiently durable, can be secured with much less trouble and much more certainty by the following method.

If I can get a negative of the desired picture, I first make a somewhat reduced positive on lantern slide glass, just as I would make a lantern slide, in the camera. I aim to secure a positive of about the quality that would be suitable for a lantern slide, that is, with both detail and contrast. From this I make a reduced negative, in the camera, and from this a contact positive, on Eastman's transferotype paper. If I mean to transfer direct, I make the reduced negative just the size that the picture is to be when in place on the watch case, and in making it I reverse the negative, that is, turn the glass side toward the camera, so that in making a positive from it on the transferotype paper I get a reversed positive, which is again reversed into its proper position when transferred to the metal. The objection to this plan is that it makes it necessary to immerse the watch case in hot water, which again makes it necessary to have the works, and even the case springs, removed before doing so. After a good bit of experimenting, I have found a much less troublesome plan to be as follows. Make your reduced positive from the original negative, then from that the reduced negative on lantern slide glass, and be sure to make it about two-thirds the diameter that will be required for the finished picture. It need not be reversed. From this make a contact positive on transferotype paper, expose for moderate contrast, and develop pretty far with ferrous oxalate, clear with acetic acid solution, wash well with pure water, fix in pure hypo. solution, about three ounces to the pint, wash well and allow to dry. Then cut out the part you want to transfer, and lay in a saucer half full of water at about 100° Fahrenheit. It is well to have a layer of clean absorbent cotton at the bottom of the saucer. Now slowly add hot

water, a few drops at a time, till the film begins to loosen at the edges, when with a little delicate coaxing with a clean sable paint brush, such as is used for water color painting, the film will leave the paper and float in the warm water. It can now be turned over by gentle manipulation with two such paint brushes as have been described and transferred to the watch case. Here is where patience and a light deft hand come in, for the film evinces a tendency to curl up and to resist your efforts to uncurl it, that are, at times, positively aggravating, and the least violence is sure to result in a tear that ruins the whole. However, with care and patience the transferred film can be unrolled and placed right side up in the desired position. Then, keeping the surface on which it lies strictly level to prevent sliding, carefully absorb the superfluous moisture from round the edges of the film with clean blotting paper and set away in a dustless place to dry spontaneously. After it is quite dry, say next day, wet the surface of the film with a solution of common alum, carefully filtered, then wash with clean water on a bit of absorbent cotton and set aside for a final drying. A coat of varnish, such as Carbutt's roxyline enamel, is said to improve its appearance and add to its durability, but I have not found it necessary. A picture transferred in this way to the inner cover of an old watch has been lying uncared for on my desk for months and is in good shape to-day. It is on the convex side of the metal, too, so that it is less protected than it would be on the inner concave side of a watch case.

The point in this method is the avoidance of reversal of the negative or positive in printing, as the film can be turned over when separated from its paper support, and the fact that the print for transfer must be smaller than the finished picture is to be, because it expands as soon as it leaves the paper. If allowed to separate from the paper spontaneously and the water is not too hot, this expansion is so even in all directions that the enlarged transfer is free from any noticeable distortion.

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### Submarine Photography.

**M**R. LOUIS BOUTAN has made some interesting experiments in submarine photography. He is an ardent student of zoology, and during the investigations he made on the shores of the Mediterranean he was so impressed with the beauty of the sights offered that he concluded to make some effort to represent them by pictures as well as by words. His first experiments were made at a slight distance under the surface of the water, where the intensity of the light is still sufficient for the production



of photographs; he constructed a camera and an instantaneous shutter especially adapted for use in water. Finding it desirable to take pictures at greater depths, Mr. Boutan resorted to the employment of artificial light, and employed an apparatus whose construction is shown in the cut.

#### APPARATUS FOR SUBMARINE PHOTOGRAPHY.

The apparatus comprises a barrel, T, containing oxygen and carrying a glass globe, C, in which is placed a lamp, A, having a wick impregnated with alcohol. The operator, by pressing the bulb, P, at the end of the tube, H, may throw some magnesium powder into the flame, or otherwise produce a flash light within the globe, C. The operator puts on a diving suit provided with the usual air supply pipe, S, and places his camera, M, which is watertight, in proximity to the oxygen barrel, T, so that he can readily actuate the shutter and the flashlight apparatus.—*Scientific American*.

#### FOCUSING SCREENS.

TO THE EDITOR.

Sir. On page 362 of your August number you say that Mr. Keith, of Edinburgh, showed you "his improvement on a ground glass," not aware apparently that the method has been in very common use for more than thirty years; having been suggested by Mr. Shadbolt while editor of the *British Journal of Photography*.

The image is not formed on the polished surface of the glass, but in air, and is made visible generally by a Ramsden's eye-piece arranged in a sliding collar and clamped so as to have its focus exactly on the front of the polished part of the screen.

Instead of having a portion of the ground glass polished I have always cemented by Canada balsam on the front, a disc of microscopic covering glass, which answers the purpose admirably.

Might I just hint that the denizens of Auld Reekie—beautiful Edinburgh—will hardly feel complimented by being classed as Englishmen, Britons if you like, but a Scotchman is proud of his country.

Yours, etc., JOHN NICOL.

# THE AMERICAN AMATEUR PHOTOGRAPHER.

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ALFRED STIEGLITZ.

EDITORS

F. C. BEACH.

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## Editorial Comment.

*Verta La Crosse's Article on "Plagiarism."*—In view of the fact that Verta La Crosse's article on "Plagiarism," in the August number of the AMERICAN AMATEUR PHOTOGRAPHER, seems to have unfortunately caused much uncalled for comment on the part of several of our English contemporaries, we wish to call our readers' attention to the fact that "Verta La Crosse" is a well-known writer on photographic subjects, and one who *never* exhibits. We are forced to these remarks, as Mr. W. B. Post's letter in the same number of the AMERICAN AMATEUR PHOTOGRAPHER upon the same subject, has led many to believe that Mr. Post and "Verta La Crosse" are identical. We are in duty bound to correct this notion, and must also say that it was *purely accidental* that the article and the letter appeared in the same number. In regard to the publication of the letter, we may say that it is our policy to publish all correspondence sent in for publication. Editors, as a rule, have an undue advantage over the general public in publishing such letters as suits their ends. We believe in an even chance and absolute fairness; and therefore have opened our columns to all those who may wish to use them. We also wish to say that terming a man "plagiarist" is a direct accusation, and hardly a criticism. *The American may be sensitive* in this respect, but whether that be a fault or virtue is not for us to decide. (On another

page we reprint in full the remarks of our English colleagues.) Granting that Americans, as a rule, smart under adverse criticism, we do not know whether other people differ so very much from them in this respect. But every rule has its exceptions, and there are many Americans who can certainly stand adverse criticism without complaint; but even these dislike accusations which may give false impressions. Accusing a man of plagiarism is no trifling matter.

*Plates for the Hand Camera.*—In looking over an article on the above subject by Mr. S. L. Coulthurst, in the *Photographic Record*, we note his experiences with different brands of plates in hand camera work. He wished to try practically a few brands said to be very rapid. He did test nine different brands, giving all the same exposure, same light, and severe conditions as regards light and shade, developing with a ten per cent. solution of pyro, bromide of ammonia and ammonia. He says:

The trials I gave were from a practical point of view, that is, upon such subjects as offer themselves in country rambles and street work at close quarters, etc., most of these being subjects with deep shadows, and therefore requiring the quickest of plates to get a fully exposed negative.

In these tests I have come to the conclusion that in my hands, of the plates I tried, there are only three really good hand camera plates; by this I mean a plate that has the following qualities: 1, good speed; 2, easy to develop; 3, and above all yields a negative of even quality.

One of these three he found, though it lacked somewhat in rapidity, still had the advantage of standing more forcing than the others, besides giving a soft and delicate negative with excellent gradations from high lights to shadows, from which perfect slides or enlargements can be made.

He says further:

In hand camera work we require a plate that will take anything, as we do not know what may turn up, or how the lights will change in this delightful country of ours.

*Booking the Prize Lantern Slide Set.*—We are noting down dates and localities for those of our readers, societies and clubs who would like to secure the use of this fine set of slides for the entertainment of their friends.

Those who have not applied should do so at once. No expense is incurred, except that of transportation from one place to another.

*Deterioration of Plates in Plate Holders.*—It sometimes happens that holders are loaded with plates for a long while before they are actually used in the camera. Our attention was called lately to an instance of peculiar deterioration that should be made known. It was that of a plate presumably old when taken from the original package, and placed in a

wooden plate holder, had been kept there for three months. It was then exposed by means of a shutter to a water view. Upon development the reversed position and image of the lettering on the slide "EXPOSED" appeared very plainly on the film. The letters on the slide were inward facing the sensitive film, and about one-eighth of an inch away from it. The ink was gilt colored. Without having any further details it would seem as if there must have been a sort of phosphorescent or chemical action emanating from the paint on the holder slide upon the surface of the film. It is certainly very curious, and suggests the idea that a different kind of paint should be used, or that slides should be marked differently.

*Our Annual Lantern Slide Competition.*—On another page will be found the rules of this competition. It is hoped all interested in slide work will compete, in order that a creditable collection may be gotten together.

*Award to Our Editor.*—As we go to press, we receive notice from London that our editor, Mr. Alfred Stieglitz, has been awarded the Royal Photographic Society Medal at the International Exhibition just opened there. Of medals, this is the most desirable that can be won.

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#### REPRINT OF ENGLISH COMMENTS ON VERTA LA CROSSE'S ARTICLE ON PLAGIARISM.

(From the "*Amateur Photographer*" (London) August 30th, 1895.)

In our issue for June 7th, p. 354, we called attention to the curious similarity of ideas in two pictures by two well-known American workers, and again our judges commented upon exactly the same thing on p. 283, and this again with precisely the same two men. We naturally expected that one at least of them would write and disclaim any intention of wilfully plagiarising the other. But no—such a denial has not yet reached us.

In the current issue of the *American Amateur Photographer*, however, however, is an article by a contributor whom we regret to say we cannot honestly entitle a gentleman, which might be, and is evidently intended to be, a distinct answer to our remarks, but it is couched in language which we should hardly have expected any reputable journal to have admitted.

Feeling doubtless that he, or it may be she, had a weak case to defend, the old adage of abusing your opponent has been adopted, and the coarse vulgarity of the language, is, we trust, not representative of that usually employed on the other side of the Atlantic. The honor of having beaten us out of the field by sheer abuse and vulgarity rests with Verta La Crosse, whoever he or she may be.

It is human to err, and nature probably to be intolerant of criticism and correction, even when correction is applied privately. How much worse it is, however, when anything not quite flattering is said publicly, either in print or verbally, a fact we only commented on a few weeks ago. We think our transatlantic competitors, their sisters and cousins, and their aunts, etc., are far more susceptible than we are,

for of the half dozen competitors hailing from U. S. A., there is hardly one that has not squirmed and protested at some time or other under criticism.

In England, of late years, at any rate, we have lost to a great extent that absurd journalistic jealousy, etc., which was so characteristic, except in one case, but as that is merely a trade paper, a shop rag, as it has been called, no one minds, least of all those who are attacked. There is a healthier tone generally, although a cynical friend remarks that it must be curious journalistic ethics which permit the editorial staff of a paper to compete and take prizes in its own competitions, such a thing being very marked in one case lately.

(From "*Photography*," (London) September 5th, 1895.)

The tenderness of the American amateur to criticism is borne testimony to lately in a very marked way, and the strength of the pronouncement on this head is emphasized by the fact that it is the editor of the *American Amateur Photographer* who makes it. Last month he commented on a letter he had received from Mr. Clarence B. Moore, of Philadelphia, (touching a criticism of his work by Mr. George Davison), and well and accurately described Mr. Moore as "one of America's most prominent amateur photographers." The editorial comment ran: "We sincerely agree with all Mr. Moore says about Mr. Davison's criticisms. They are fearless and impartial, and carry weight, as Mr. Davison has proven by his own work that he stands amongst the very foremost of pictorial photographers. *It is certainly a great pity that most of our workers over here cannot stand fair criticism.* Fair criticism ought certainly to help those whose aim is a serious one; we may not always agree with a criticism, but we always listen to one, and rarely without some benefit." We put in italics the expression of opinion which so pithily puts the fact, and because it contrasts very strongly with an expression of opinion, editorially sanctioned, in the present issue of the journal in question. This paper has has been dealing with kindly and well-meant criticism in an English photographic journal, and thus concludes: "My advice to the photographer is—go ahead—take no heed of these barking curs. They are harmless, and don't imagine that *because a man is editor of an amateur photographic magazine that he is a competent critic.* Very few of them are." This is a very unkind cut to the friend who allows this writer to use such language, for he is indebted to the editor of an amateur photographic journal to see himself in print. How is it that the majority of our cousins lose their heads when they are criticised, and resort so freely to slum and gutter style? Of course, the statement may be taken for what it is worth—which is not much—for the editor who has ruffled the plumes of this writer is as competent, for certain, as he who so sagely offers his advice. But what puzzles us is that advice so couched should have appeared in a respectable journal. We can only believe that this choice example of vituperative English has somehow escaped the eye of the editor.

If our friends, the amateur photographers of the United States, were all of the same mind as Mr. Clarence B. Moore, and looked upon criticism as a good and essential part of their education, they would gain very considerably, for they may be sure that they will not reach the further heights of photographic reputation without considerable exertion and many a failure. Their cousins on this side have had to tread the path to success in the ordinary way, and we do not suppose there is any shorter cut—even via Sandy Hook—to a good reputation than hard work, and the

following of good advice from those who know. Some workers on this side do know a little, and their advice may be safely followed, and these are they who, in their time, have been glad to have had their work criticised and its faults pointed out. In the photographic workers' world—especially the pictorial—there is no room for the superior person. Such of the workers who have sent contributions to British exhibitions have always been treated fairly, and the work has won its place for its merit, and not from the name of the producer. And so it has happened sometimes that a picture which has won a place at one exhibition has failed to score in another, where the work of other exhibitors was of better quality and higher merit. This is a common experience. It does not render the quality of any individual picture of less value, of itself, but only when viewed in competition with others. And it is in connection with a competition, the works in which were submitted to a competent English critic, that Mr. Clarence B. Moore, of Philadelphia, with the characteristic good sense of a man who wants to succeed, and is desirous of knowing his weak points, has written: "I wish to say that in each point where Mr. Davison criticises my work unfavorably he hits the nail full on the head, and if we had over here such a worker as Mr. Davison, and such a just, fearless and competent critic, combined with workers who would give heed to his counsels, the cause of amateur photography on this side would be materially advanced." The contrast between this utterance and that of another writer, who we also quote, is most marked. It indicates the difference between a gentleman and an earnest worker and—well, a fuller definition is hardly necessary. In the present issue of the same journal is a letter from another American worker, who has let his pen run away with him, and who is angry at criticism, and expresses it hardly in a dignified way.

## NOTES ON THE DETROIT CONVENTION.

BY DR. HUGO ERICHSEN.

What would have proved an interesting exhibit for the Photographers' National Convention at the Art Museum, and really should have found space somewhere, was a handful of old photographs which one of the members had taken from ten to twenty years ago. It is not necessary to describe them. Everybody knows the painfully stiff attitude and the grim stare, or what was perhaps worse, the vacant smile that characterized the photos of those days. There were two or three photographers standing around at the time, and they had a hearty laugh at these specimens of what used to be considered art.

"The new school of photography," said one of the veterans by way of explaining the vast progress that has been made of late years, "shows an inclination to take advantage of natural positions instead of posing subjects, as used to be the rule. We must still use discretion, however, to remedy any ungraceful position by moving the hand or the head, but we utilize the natural pose as much as possible. A great deal of character is shown in the pose of the head and the position of the body, and all that goes to make up a good likeness, as well as the expression of the face. Thus we ask a lady to sit naturally, and if she has any native grace she will take up a position that we could not improve upon by twisting her about. This is more noticeable in later pictures of children, which are taken almost entirely in natural

positions. The photographer, instead of placing them in a strained position, lets them play around and catches them by a snap shot in a natural position.

STRATAGEMS RESORTED TO.—“There are some people who have a horror of getting their portraits taken, and we have to resort to all kinds of stratagems. There was an old man whose sons and daughters wanted to have his picture taken, but he was obstinate. I suggested that he should bring his grandchild to be taken, and when he did so, I casually asked him to hold the child's hands and not move. He did as I told him, and I got a snap shot at him. He never knew that he had been taken, and was very much surprised afterwards when shown a good bust picture of himself. He was perfectly satisfied in the end. As age creeps on, people get more and more averse to being taken, and it is only by removing the traces of age that we get them to accept work at all, although it may be quite artistic in itself. With lady sitters our art has to be applied. When a lady assures us that she has never had a picture that looked like her, we are perfectly sure that she is anxious to be flattered, and it would be suicidal to show the proof before it is properly retouched. Pictures of draped neck and shoulders—or perhaps I might say undraped—are very popular just now among ladies whose natural beauty will permit it, but art can be used in covering up the lack of the necessary qualities to a wonderful extent by improving the lines and rounding the figure.

“One of the latest adjuncts to an operating room is the ‘make-up-box,’ where the up-to-date photographer improves the lips and eyes by penciling, strengthens the eyebrows and in many ways improves the contour of the face.

WANT TO LOOK PRETTY.—“When a lady says frankly that she wants to appear pretty we do all that for her. If a lady has not a straight nose a line down the side will make it appear so, and lines under the eyes will make them appear large and lustrous. Of course every lady wants to have a ‘Cupid's bow mouth’, and that is effected by pointing the lips. A lady may have very thin lips, and still in her photograph she has a perfect mouth, and people wonder how it is done. You need not look astonished; it is done all the time. Look at those pictures on the walls. Where did you ever see perfect faces like them? They are all touched up that way, but although the public cannot detect it, the photographer can. We have nothing to do with improving the figure further than I have indicated. The dressmaker attends to that.

“We sometimes have a good deal of trouble with people's whims, which break out when least expected. For instance, I made a picture of an old lady who required the lines of her face to be worked out to remove the traces of age. Then the daughter refused the picture on the ground that it did not look like her mother. The work done on the negative was removed and it was left as it was originally, but now the mother refused it, as it made her appear too old, and, after a protracted debate, they agreed to take half the photos in each style. With young ladies of the present day we have very little trouble. In their fresh, bright, chic costumes they make very pretty pictures, especially figure pictures. Even if a girl is lacking in beauty it is almost entirely overlooked if she has a graceful pose and a catchy costume.”

The Christ heads with crowns of thorns that have been so much discussed during the past year, were on view at the exhibition. They are the work of H. W. Minns, of Akron, O., and were taken from a living model. The idea was suggested by N. P. Willis' poem, “The Leper,” where Christ appears to Helon, the leper, at the well in the desert. The thoroughly masculine character of the face as depicted in the

poem set Mr. Minns to work to find a model that came up to the ideal. This he found in E. E. Masterman, a school teacher in New London, O. The crown of thorns was made of branches of a rose bush, and the blood was represented by splotches of paint. The portraits were reproduced in *Wilson's Magazine*, and caused considerable comment. Many thought it almost an act of sacrilege, but Mr. Minns contended that if there was no objection to the old masters using models there could be none to his doing so in following on the lines of art. Rev. Charles S. Robinson, of New York, had lantern slides made of them and exhibited them at a magic lantern entertainment in connection with his church. He said that some of his people were shocked, but the great majority commended the idea.

**PICTURES FROM THE NUDE.**—The nude in art has been the subject of innumerable discussions, and now the question is interesting the photographers, a number of pictures of nude children being exhibited on the walls. "What harm can there possibly be in those?" said one of the photographers, indicating a combination picture of a little girl bathing. "It suggests only the most perfect innocence and artlessness, and I think the world will be all the better for such pictures."

"That may be," said another, "but I don't think that young lady will care to exhibit those photos fifteen years hence."

"I don't see why she should be ashamed of it," said the first speaker, "and she will not be if she has been properly brought up. The clergyman where I live suggested such a picture to me of his little girl and the baby, both nude, so he does not appear to disapprove of it."

Col. Speck, an Elmira photographer, attracts universal attention on account of his diminutive size. He is only fifty-two inches in height, including boot heels, and turns the scale at seventy-five pounds. The name seems appropriate. The colonel is thirty-two years of age and owns three prosperous galleries. The convention would not be complete without the smallest photographer in the world.

Convention buttons have been distributed to the members. They are of bronze, and bear the inscription "P. A. of A." Some of the members also wear a gilt hammer pin.

**POSING STREET ARABS.**—It is not all work with the photographers. They occasionally have a little quiet amusement. A number of them collected on the sidewalk in front of the museum yesterday afternoon and got a dozen street Arabs to stand on their heads, a nickel being offered as a prize for the one who could maintain that "pose" longest. One of the photographers had a Kodak and took a snap shot every time there was a gap in the line, and when the pictures of these diminutive specimens of humanity are developed they will certainly be a curiosity.

The recent exhibition of the National Photographers' Association was rich in its display of portraits. A new art has arisen in this field, and the results are suggestive of what is known as real art. The grouping, the pose, the composition, the style, the treatment, these are a few of the factors which unite to bring about the brilliant effects seen in the high class portraits at the museum. The portrait work of a photographer who stands at the head of his profession is no hit or miss effort. It possesses the charm of art treatment. Framed and hung on the wall it is mistaken for a fine steel engraving. The best of the portraits are on carbon paper, which gives deep contrasts, shading from white to the blackest of India ink black.

Pirie MacDonald, of Albany, is admitted to be near the head of his profession in portraiture. He exhibits a large number of portraits of society women. The one



essential feature of all these studies is the handling of the light. In the modern high-art portrait success or failure begins and ends with a question of proper lighting. Photographers are understanding, as never before, that there is some subtle relation between the light that falls on a face and in the attendant revelations of character. The idea is to study the face from all sides, and when that point has been selected which shows character, skillfully handle the light to intensify the portraiture. These sentences contain the dry bones of a superb new art, the realization of whose high ends may best be seen by visiting the exhibition.

The coming portrait will be of carbon. It is not possible to give the general public an idea of the beauty and utility of the carbon picture, other than to say that it is produced from a mineral pigment and is as indestructible as granite. In reality it is mineral in a state of fine suspension. It is as permanent as the everlasting hills. No moth, no rust, no climatic changes will affect its dead, flat, lustrous finish.

The life-like qualities of carbon portraits, as shown at the exhibition, are their glory. MacDonald's pictures, or Steckels', stand out like things of life. The arrangement of the light and shade is superb; the posing is almost perfect; the retouching is above reproach. The texture of the skin, even, is reproduced with a fidelity to Nature that is startling. Soft, creamy laces, the sheen of satin, the glossy folds of silk are not sacrificed.

The intensity of a carbon portrait is one of its leading characteristics. It is a picture, to repeat, in the idea in another way, which does not lose anything in the various manipulations of the photographic process. All the grace, delicacy and beauty caught on the glass plate is sure to be transferred, undimmed, to the final mineral card. In this, the carbon portrait differs from any other process known to photography.

"You have no idea how hard it is to get a good photograph of children," said one of the photographers attending the National convention, yesterday. "A lady will sit patiently while you arrange her draperies and move her head or arms into the desired position, but a child is never two seconds in the same position. We have instantaneous photography, as it is called, but it is only instantaneous in a strong light, which makes the lines come out very hard. In a subdued light you require a little exposure. Another trouble we have with children is their tendency to get into all kinds of unnatural strained positions, although that is not confined to children. You have seen a mesmerist telling his subjects that he was going to photograph them. One pulls his coat, another smooths his hair, and all of them get into constrained attitudes. They throw off all naturalness and stare or smirk in the most comical way, but that is just what the great majority of people do when they get in front of a camera. I have never been photographed without catching myself doing those very things. To get the proper exposure we have to talk to the subjects, put them at their ease, and arrange and re-arrange curtains, for no other object than to gain time and make them forget their self-consciousness.

TAKEN OFF THEIR GUARD.—"The wife of the editor of one of the leading papers in Ohio came to me one day with her little boy, whom she wished to have photographed in the same pose that some other children had been taken, but the boy could not stand still long enough. I began to talk to him about fishing, and he immediately became earnest and put one of his hands in his coat pocket. That one natural movement relaxed every muscle, and the result was a good photograph.

"Another boy who was brought to me had pretty dimpled hands, which his

mother wanted to have brought out, but he could not keep them in front of him. Finally, in a spirit of fun, he threw them behind him, and the pose was so natural that I took him as he stood. Here is the result," he said, taking the photo out of his pocket. The head was a trifle bent, and face, wearing a roguish smile, was turned aside a little, so that the boy was looking out of the corner of his eyes.

"Here is another," he said, producing the picture of an old lady rather stooped, but looking as natural as life. "All the time she was sitting her daughter was telling her to sit up straight, and so on. I had to tell her 'if she wanted a good picture of her mother to leave her alone.' The old lady dropped into that position at once. What we aim at is individuality, and to attain that we have to study each person who comes to us. Actresses are no trouble at all; they drop into a graceful position of their own accord, and the photographer cannot improve upon it. Their business is making pictures all their lives, so it is easy for them to make one for the photographer."

**SOME GOOD ADVICE.**—"If you were advising people about getting their photographs taken, what would be the points you would dwell upon?"

"In the first place, I would tell them not to bring their children decked out in red, purple, or gaudy yellows, as so many of them do. These are always disappointing colors, and do not photograph as they appear to the eye. Red, for instance, takes black, and the shadow is very dark. Soft goods that drape nicely are the best, and as for color I would advise neutral tints—gray or cream. For elderly people, if they can wear black they look better in it. Don't go to the photographer in a hurry, for even if your face does not appear to be flushed, the blood will not be far from the surface, and it will appear in the negative, making the shades appear darker and the lights whiter.

"On one occasion a person who had come into contact with smallpox had his photograph taken, and although it was three days later before the rash broke out, it was shown on the negative. This will show you how fine must be its perception—far beyond that of the eye. Children should always be taken in the forenoon if possible, for the light is clearer, especially in a city which is overhung by a cloud of smoke. A yellow light is a slow light, and makes it so much more difficult for them. There is still another reason. Children are usually not so tired in the forenoon, and are consequently in a better mood than they would be later in the day."

**Memorial to B. J. Sayce.**—We have received a circular letter and blank subscription paper sent by representatives of the Liverpool Amateur Photographic Association, gotten up in behalf of the widow of Mr. Sayce.

Subscriptions are solicited from all over the world, and our readers are urged to contribute something. We will receive subscriptions and forward to the Hon. Treasurer, John Hargreaves, Percy Buildings, Eberle street, Liverpool.

The circular states:

"Like many great inventors, Mr. Sayce's first object was not to lay up a fortune for himself, but to give the benefit of his work to all who chose to profit by his experiences, and so it is now regrettable to find that at his death his means are very small.

He has probably done more than any other to render photography practicable and simple by his early discoveries in the dry-plate processes, which have been the main basis of all modern photography. The fact is recognized that, although the researches and experiments cost him much time and money, Mr. Sayce has for over thirty years given the benefit of his discoveries free to all the world."

## Society News.

**Society of Amateur Photographers of New York—International Yacht Race Excursion, September 7th, 1895.**—The first boat excursion undertaken under the auspices of the Society occurred on the date mentioned, and was very successful so far as the boat and observation of the race was concerned, but decidedly disappointing from a photographic standpoint. The boat was the fine, new triple-screw propeller *Favorile*, plying between Norwalk, Conn., and this city, of 361 tons' capacity and capable of carrying 700. The tickets were limited to 200, so there was ample room for cameras and accessories. The day was unpropitious at first, but the fog lifted, and pleasant, soft light prevailed, but the clouds were in long, parallel rifts, not effective for good skies. The steamer started from the foot of East Thirty-first street at 8:45, and left the foot of Beekman street downtown at about 9:25.

After passing Fort Hamilton the channel near Coney Island was taken, and the long trip out on the ocean to the starting point was begun. Other boats, filled with passengers, somewhat faster than the *Favorile*, overtook and passed her. As they did so excellent opportunities were presented for snap shots of steamers going to the race. The ocean swell rocked the *Favorile* in an easy manner, but upset the feelings of several photographers and many ladies (there were about a dozen on board) so that the outlook to them was anything but pleasant. About 11:30 the supposed starting point was reached, and the sails of the two great yachts, the *Valkyrie III.* and *Defender* could be seen moving about in the distance. Some change in the programme had evidently been made, and it took half an hour to get near where the committee boat was located.

The wind was blowing at a very light velocity from the ocean inward, and the plan was for the yachts to beat out into the ocean fifteen miles, then come back again inside of six hours. At last 12:20, when the *Favorile* was located half a mile or so from the scene, the signal for starting was given, the *Valkyrie* going a full length ahead of the American boat. This critical moment found our boat in the poorest possible position for getting any satisfactory picture. Then when the starboard tack was taken, and the *Defender* forged ahead and passed the *Valkyrie*, several large ocean steamers were permitted to get between our boat and the yachts. So it happened as the last tack to the port was made that the yachts gradually went off in an oblique direction from our vessel, and the interesting manoeuvre of the *Defender* passing in front of the *Valkyrie's* bow was too distant to be depicted. Then, at the fifteen mile stake flag, around which the *Defender* turned  $4\frac{1}{2}$  minutes ahead of the *Valkyrie*, our boat was about three-quarters of a mile distant and several other boats between, preventing pictures showing this feature of the race from being satisfactorily taken. The committee in charge seemed to have no control over the captain, and he acted in a most unaccommodating manner, not having the slightest regard for the wishes of the many photographers. As a consequence, there was an immense amount of grumbling and ill-feeling. But one-quarter of the plates were exposed that would have been, had so many opportunities for position not been lost. The trip homeward was rather more comfortable than that out against the waves. One skilful amateur carried an 8x10 camera on a tripod on the bow of the boat; a sudden pounding of the bow by the waves sent the camera over backward on the floor of the boat before he could

prevent it. The back was damaged, but nothing serious. He had been on the water many times, but this day the waves proved too much for him, and he had to give up something to the ocean, trying to pacify himself with sleep the rest of the time. As it was, he did not expose a plate. At the finish, 5:20, the light became poor, misty weather appeared, and it looked bad for rapid work. As usual, the *Favorite* was way-off, and when the captain was implored to get nearer, his reply was: "Why, this is a good view; you can see it all here," little realizing such a view, while pleasant to the eye, was of no account for a photographer.

So the day ended, a great disappointment to those hoping to have good opportunities for photographic work. The run home to the dock at the foot of Beekman street was made in two hours, giving all a ten hours' trip on the water. Among those on board were Mr. George Bailey, President of the Buffalo Camera Club; Mr. Edmund Stirling, Secretary of the Photographic Society of Philadelphia, and a few members of the Orange Camera Club. We counted sixty-two cameras, and were informed by the committee that about 200 were on board. The committee in charge consisted of Mr. R. A. B. Dayton, Mr. W. E. Johnson and T. J. Burton.

*Regular Meeting, Tuesday Evening, September 10th*—The first meeting of the new season, 1895-96, was held at the rooms of the Society, 113 West Thirty-eighth street, New York, on the above-named evening, being called to order at 8:30, with President C. C. Roumage in the chair. Mr. A. P. Shoen acted as Secretary *pro tem* in the absence of M. R. L. Bracklow, the regular Secretary. A demonstration of Velox paper made by the Nepera Chemical Company had been arranged for, but for some reason their representative was unable to be present. However, Mr. F. C. Beach showed samples of the paper and one or two prints he had made on it. He regarded it as combination of a bromide and chloride gelatine paper, similar to the Alpha paper which was brought out a few years ago, only an improvement on that. In the printed directions explanations about exposing and developing are given, but no formula is mentioned of how to prepare the developer. In purchasing the paper the developer as prepared by the company is also to be bought. But Mr. Beach thought it was a highly restrained metol and carbonate developer, inasmuch as he could develop a picture on it with ordinary metol developer containing little alkali; also the appearance of one of the powders sent was like metol. That day, near six o'clock, he exposed a sheet for eight seconds behind a negative to dull daylight; kept it in the prepared developer for five minutes with no result. The developer was poured off, print washed, and a small quantity of eikonogen and sulphite poured on, no alkali, causing the image to come out with a flash. The experiment proved that the exposure was too short for the highly restrained developer. Another sheet was exposed two and one-half minutes to the same light and placed in the prepared developer. In two or three minutes the image slowly appeared, and was of a brick red color. The process was so gradual that it was perfectly under control, and at the end of ten minutes was fully developed out. The directions stated that the print should be immersed in a weak acetic acid bath, then transferred to a hypo. and alum bath, where the desired tone or change from brick red color to purple would take place. But Mr. Beach simply fixed the print in a plain hypo. solution. No darkening in tone occurred, but the image fixed in as red a color as when put in, proving that the alum produces the tone. The red image may be toned with gold or platinum instead of alum. The finished image is as brilliant and fine as an albumen print,

and it is claimed is absolutely permanent, as much so as the film on a glass negative.

The formula of the toning and fixing bath is

Powdered alum.....	1 oz.
Hypo. (Walpole).....	10 oz.
Water.....	80 oz.

The milky mixture should be filtered and allowed to stand a day or so and the clear solution only be used; it is said to improve with age and can be used repeatedly, simply requiring occasionally a supplemental addition of a small quantity of fresh hypo. and alum. The mixture has a decidedly sulphurous smell, showing that the toning is due to sulphur. As the print darkens considerable in drying, it must be removed from the solution when of a much lighter color than is desired. One or two experiments easily determines this point.

The toning-fixing bath works best at about 70°F. Instead of using acetic acid and water as a short stop it is advised to use a plain very weak hypo. solution; about 5° hydrometer test.

Dr. John Nicol thought it a mistaken policy for any manufacturer of a paper to keep any of their formula for developing or toning a secret. He wanted to know what he was working with and that his chemicals were pure.

Mr. Beach next exhibited a model of the Eastman Kodak Pocket Camera, kindly loaned by Mr. W. C. Cullen, of 61 William street. This little camera is most perfectly made, aluminum forming part of the box. It takes a picture about 1¼ inches wide by 2 inches long. The shutter is the same ingenious simple piece of mechanism that is in the Bullet camera. It can be loaded and unloaded by daylight, and has new arrangements for holding the spools outward and readily accessible when loading and unloading. These new features make it a popular camera, and there is every reason to expect that thousands upon thousands of them will be sold, as the price is reasonable and the article is worth the money.

He also exhibited an improved form of the Irving-Clay 6½ x 8½ Folding Hand Camera, sent for exhibition by the Scovill & Adams Company. It is a beautifully finished camera, capable of nearly every motion required by a camera, either for the hand or tripod. The especially new feature is the reversible back, by means of which the plate holder can be pushed in from the top or side, at the wish of the operator, without having to turn the box itself around. The folding front leaf is arranged to hang down when desired, at an angle below the horizontal line, an advantage when a wide angle lens is used, as it prevents the cutting off of the lower part of the picture.

Mr. A. Peebles Smith, of Newark, N. J., gave an interesting demonstration of his improved cold bath platinotype process, which he regarded fully equal in its effect and results, to the paper made in Philadelphia.

He preserved it in tin cans in the same way.

Specimens were shown printed the right depth for immersion in the developing bath of oxalate of potash, which he said need not be fully saturated, but should be of strength about 6° Baume hydrometer. He produces sepia tones by using a warm solution. He made the prints by the electric arc light, giving a few minutes' exposure, and developed them very successfully. The demonstration was very satisfactory.

Upon the invitation of Mr. Beach, Riley Bros. & Co. recently established at 16 Beekman street, New York, and a branch of the same house in London, through

## THE LAWTON ETHER SATURATOR.

the ether saturator. He had used them several years, and alluded to the prejudice against them that has existed for many years, because when first invented the gas was passed through an ether solution before it entered the burner, and serious explosions occasionally happened because of the drawing backward of the gas. But Mr. Fred. Ives invented the plan of saturating fibrous material with ether vapor, through which the gas passed, and then to the burner. In passing it takes up or absorbs a certain amount of the ether and becomes enriched. In this form the apparatus is perfectly safe, and gives a brilliant and a remarkably steady light, free from noise and flicker. In the Lawton saturator and burner the ether is poured in at the top of the wool chamber, about three ounces, which is absorbed by the wool, and is enough to last for a three or four hours' steady run.

The executive business of the meeting consisted in the re-election of Mr. F. C. Beach as Lantern Slide Director, to represent the Society in the American Lantern Slide Interchange for the season of 1895-'96. A few announcements were made, and the meeting then adjourned.

*Test Night, Wednesday Evening, September 18th.*—At the regular weekly test night for slides, Mr. Riley, of Riley Bros., again exhibited the Lawton ether saturator before the members of the Society, projecting a series of slides on the screen. A very fair light was obtained, but not as bright as expected, because of the low pressure of oxygen gas in the cylinder. He explained that the chamber holding the wool was packed somewhat tightly, and it required considerable pressure to force the gas through to the burner; the pressure should not be less than fifty pounds to the square inch. The pressure at the cylinder was but thirty-five pounds to the square inch. He also found it wasn't any cheaper to run the ether jet in the United States than the mixed jet, because in the United States hydrogen gas is practically given away, while in England the same price is asked for each gas.

But it is less bother to operate with but one cylinder of gas, which he thought was an advantage.

their representative, Mr. Schnadig, exhibited in operation the new Lawton ether saturator for the optical lantern, which it was claimed would give as powerful a lime light as the mixed jet, the advantage being that only one gas is employed—oxygen. Part of it is diverted through wool inclosed in a chamber saturated with ether, taking up hydro-carbon and mixing at the jet with pure oxygen, forms the mixed blow-pipe flame. Owing to some slight defect, the apparatus did not work as smoothly as it generally does. It is, however, very compact, simple and practical in its construction. Dr. John Nicol said a few words in favor of

*Friday Evening, September 27th. Exhibition of Lantern Slides.*—The set selected for this first exhibition of the season 1895-96 were the slides sent to the American Lantern Slide Interchange by the Photographic Society of Japan, illustrating scenery, manners and customs of modern Japan. All are nicely colored by Japanese artists, and are fairly good technically. An apology was made for the set, on the ground that the number of contributors was less than expected, and there was not time because of the war difficulties, to exercise the sifting out process as much as could be done.

However, the set as a whole contains many interesting pictures, and will be instructive to many as regards this remarkable country.

The first ten or fifteen slides illustrate the Ainu and their land, located in the northern portion of Japan. They are supposed to be the race first occupying the whole country. They are different in many respects from the native Japanese, and have peculiar customs. Pictures were shown of the men, the women, and the unsightly effect of the custom they have of tattooing a mustache on the upper lip, with a substance of a dark blue color. Views of their rough dug out boats; of women weaving in the most primitive style, and the ceremonious affair of an Ainu about to take a drink were shown. They are a curious people.

One picture of an Ainu girl brought up in a missionary family, and prohibited from having the mustache or wearing Ainu clothing, was very pretty and an excellent slide.

Next followed a series of six or eight slides, illustrating Geisha, the dancing and singing girls of Japan. They are *petite* in size, attired in rich colored gowns, and have peculiar styles of wearing the hair. They are considered the most handsome and accomplished women of the country. Views of Great Buddha, a bronze statue over fifty feet high; of a vender of bamboo wares; of the champion wrestler of Japan, Nishinoumi; about Yumoto, in the Nikko district; of Japanese junks in various styles; of an outing by members of the Photographic Society; of students of the Imperial University; of the milkman at the same; of the beautiful flowers raised in Japan; of Matsushima (the Pine Tree Islands), showing where the Japanese get their ideas of flat top looking trees, as is seen on pottery and lacquer ware; of the headquarters of the army of Japan; of the entrance, exterior and interior of the great temple at Nikko; of the theatre at Tokio; of the railroad bridge destroyed by the great earthquake of 1891; of the interior of the crater of a large volcano immediately after the eruption of an earthquake; of the novel snow scenes observed on the west coast of Japan, and of the lake about the great volcano Fuji-San, and several views of the latter made from different localities. All were good slides and quite interesting. The set concludes with a slide illustrating the farewell greeting as a guest is about to leave the house at the door. The lady of the house makes a gracious bow, saying, "Sayonara," meaning literally "If it must be so." Considering that this society has just undertaken slide making and contributes now its first set, the work as a whole may be regarded as satisfactory. There is a rich field for photography in Japan, and no doubt in future sets pictures illustrating the details of the carved work about the temples will be sent.

**Toronto Camera Club.**—We are informed by Mr. E. M. Lake, the Secretary and Treasurer, that the club has recently fitted up larger quarters in the most approved style as regards facilities for practical work, combined with a hall for lantern slide exhibitions. Americans and others visiting that city, are invited to avail

themselves of the facilities. The club is engaged in preparing a set of slides for the next Interchange season. Last year it had the reputation of sending the highest average of good work of any new club entering.

**American Lantern Slide Interchange.**—The new season of 1895-96 of the Interchange begins the latter part of November, when the several clubs make their annual contributions of slides for examination by the Board of Managers. The selected lots of slides are grouped in sets of 100 and more, for exhibition among the clubs.

It is reported that the New Orleans Club may not enter the Interchange this year; the Rockford Camera Club proposes to re-enter, and other new clubs contemplate joining, making it probable that the numerical strength will remain about the same. The new accessions will be mostly from western clubs.

There has been received an excellent selection of slides from the affiliated societies of the Royal Photographic Society of London, which is replete with good work. The paucity of description on the list regarding notable places, is the only fault that can be found. There are examples of interior work on non-halation plates, that are remarkable for their beauty of tone and gradation. All experts in slide making will profit by seeing this set.

In the month of October a new board of five managers is elected by mail vote, to carry on the work for the ensuing year. New sets of foreign slides are expected from the London Lantern Society, the Photographic Society of the North of France, and from *Photography*, which, with the Japanese set and the Royal Society set, will make an interesting and entertaining series for this winter.

New clubs desirous of joining the Interchange, should address Mr. F. C. Beach, General Manager, 361 Broadway, New York.

**Oregon Camera Club**, Portland, Ore., holds its first annual print exhibition at Mr. Bernstein's art gallery, No. 307 Washington street, from October 12th to October 19th, inclusive. Three prizes are offered. The judges consist of one artist, one professional photographer and a third person selected by the above. The exhibition is under the management of the following committee: Edgar Felloes, Chairman; Olaf R. Pihl, Hugo B. Goldsmith, Dr. F. E. Ferris.

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**Useful Notes.**—The evening is best for taking views with heavy foreground and distant high lights. The yellowness, usually seen in the sky when the sun is setting, tends to equalize the wide difference of actinic value of foreground and distant high lights.

Have an object in your work. Try and run in a special channel, and you will find your interest grow more intense. The old axiom, "Never point the lens towards the sun" is being much disregarded. Many most successful and artistic pictures result through this change from tradition.

It is becoming understood by photographers of all grades that technical excellence of negatives in itself is of little avail; it is only when this technical excellence is combined with artistic merit that a good picture results; and of the two requisite qualities, perhaps artistic merit is the most essential.

If you spill hypo. or any similar substance in your dark room don't leave it to dry up, wipe it up with a cloth at once; otherwise it will evaporate leaving fine crystals, which will float about us as dust, and be sure to spoil something or other, and you may look in vain for the cause.

If you want to try a negative quickly place it in a dish of methylated spirits for five minutes. Take it out and it will dry very quickly. Be sure the hypo. is thoroughly washed out before doing so, or you will have trouble.—S. L. C., in the *Photographic Record*.



**Second Annual Photographic Exhibition of the Bridgeport Library.**—The opening of the exhibition was postponed from September 21st to the 26th, and though it was an unpleasant evening there was a large attendance. The room is quite large, there being ample wall space for a fine display.

There are also several center screens filled with photographs, and an unusually good exhibit of all styles of photographic apparatus. In entering the room, at the front on the left wall near the door was seen one of the best exhibits, that of the AMERICAN AMATEUR PHOTOGRAPHER 1894 special artistic prize competition, comprising over forty pictures. We were told that the general public were unable to agree upon the picture that took the first prize without consulting the catalogue. The pictures were nicely hung and well lighted, and attracted considerable attention; several of them have been reproduced in these pages, so that further comment is scarcely necessary. They do credit to amateur photography, and will educate many to the idea of what constitutes pictorial photographs. Another special series of photographs was the exhibit of Wm. Dinwiddie, ethno photographer of the Smithsonian Institute, of Washington, representing types of Arizona and Mexican natives, Indians, and their habitations, taken within a year or so. The work was carefully done, truly representative of the subject, and what is better, the prints were of the permanent platinotype process.

There is a goodly exhibit of work by local photographers, and a larger number of clubs outside the city are represented than ever before. The Boston Camera Club has four exhibitors; Springfield Camera Club, two; Camera Club of Mount Vernon, New York, five; Providence Camera Club, one; Photographic Society of Philadelphia, two; the Y. M. C. A. Camera Club of Bridgeport, four; New York Camera Club, one, and Society of Amateur Photographers of New York, two; which shows that there is a general interest in exhibitions conducted on a liberal scale, as this one is. For this exhibition lantern slides and transparencies were solicited. The number of exhibitors is not large, but we noticed some excellently colored slides of local subjects by Mr. L. Farini.

The Providence Club sent a set, but the lot which were most looked at was the set illustrating the California Mid-Winter Fair of 1893, by the California Camera Club, of San Francisco, and exhibited by the American Lantern Slide Interchange. Special frames were made for exhibiting slides by a north daylight, backed by ground glass, and they made quite an attraction. Another departure is the holding of popular lantern slide exhibitions, one evening during a week, on the screen. The first of these was given on Thursday evening, October 3d, when Mr. F. C. Beach explained informally the slides of the Mid-Winter California Fair, previously mentioned. The lantern was operated by Mr. Wm. H. Josselyn, of Bridgeport. There was a large audience, and the idea appears to be popular. Each Thursday evening during the month exhibitions will be given, and will include a set of slides by the Photographic Society of Japan; South Africa, by L. Farini; local scenery, by W. J. Hills, and slides of the Society of Amateur Photographers, of New York. The exhibition closes on October 31st.

#### BOOK RECEIVED.

CATALOGUE OF SECOND ANNUAL PHOTOGRAPHIC EXHIBITION IN THE ART DEPARTMENT OF THE BRIDGEPORT PUBLIC LIBRARY.—A well printed pamphlet of nineteen pages, giving details of photographs of this popular exhibition.

## United States Photographic Patents.

*December 18, 1894.*

530965. Hypo. Eliminator. A. Schmidt, Berlin, Germany.

*March 19, 1895.*

536105. Field of View Divider Shutter. E. Stowell, Fairhaven, Mass.

*May 14.*

539368. Process of Making Negative Plates. W. S. Phillips, Seattle, Wash.

*June 25.*

541670. Brush for Applying Sensitizing Solutions. E. A. Osse, Baltimore, Md.

*July 23.*

543064. Apparatus for Applying Sheets to Photographic Card-board. S. H. Stinson, Philadelphia, Pa.

543209. Combined Album and Writing Desk. W. A. Holman, Philadelphia, Pa.

543281. Panoramic Camera. H. G. Wood, Newport, R. I.

543439. Magazine Camera. D. B. Craw, Oshkosh, Wis.

*July 30.*

543503. Sensitive Non-halation Plate. C. F. Oakley, London, England.

543585. Photographic Plate Holder. J. Stock, New York, N. Y.

543639. Flash Light Machine. L. G. Bigelow, St. Joseph, Mo.

*August 13.*

544466. Tripod. W. H. Fisher, Cincinnati, O.

544480. Series Photographic Camera. G. Demeny, Levallois-Perret, France.

544493. Magazine Camera. J. N. Wigle, Ruthven, Canada.

*Trademark* 26,919. Optical Goods, including spectacles, lenses, test-cases and gauges. "A. O. Co." American Optical Co., Southbridge, Mass.

*Trademark* 26,925. Photographic Paper. "Cigarette." G. Gennert, Greenville, N. J.

*August 20.*

544666. Stereoscopic Print. L. D. Duhauron, Algiers, Africa.

544669. Automatic Photographic Camera. E. J. Gregory, Sacramento, Cal.

544681. Photographic Retoucher. C. B. Mortland, St. Louis, Mo.

544859. Vignetter. F. Machette, Philadelphia, Pa.

*August 27.*

545192. Photograph Holder and Exhibitor. H. Borgersen, Chicago, Ill.

545422. Reproducing Device. C. A. Chase, Chicago, Ill.

545423. Stereopticon Panorama Machine. C. A. Chase, Chicago, Ill.

*September 3.*

545452. Stereopticon Panorama Machine. C. A. Chase, Chicago, Ill.

*September 10.*

546093. Camera Lantern. O. A. Eames, Boston, Mass.

536198. Photographic Shutter. S. Slayton, San Francisco, Cal.

*September 17.*

546347. Photographic Developing Tray. W. J. Rood, Spencer, Ia.

546401. Adhesive Paste. C. M. Higgins, Brooklyn, N. Y.

*September 24.*

546751. Pillar Photograph Stand. I. Werthen, Charlottenburg, Germany.

546889. Photochromoscope and Photochromoscope Camera. F. E. Ives, Philadelphia, Pa.

### THIRD ANNUAL "AMERICAN AMATEUR PHOTOGRAPHER" LANTERN SLIDE COMPETITION.

For the best set of six lantern slides we offer one silver and one bronze medal in each of the following classes:

- I. Landscapes.  
III. Genre studies.

- II. Marine pictures.  
IV. Architecture.

#### Rules.

**RULE 1.**—Entries may be made in any or all of the different classes, and must consist of six slides for each set entered, sent prepaid.

**RULE 2.**—Both the original negatives and the slides must be the entire work of the competitor.

**RULE 3.**—No competitor will receive more than one prize in any single class.

**RULE 4.**—The size of the slides should be  $3\frac{1}{4} \times 4$ , or  $3\frac{1}{4} \times 3\frac{1}{4}$ . When viewing the picture in its natural position the label containing the title must be to the right, and the thumb label on the lower left hand corner.

**RULE 5.**—Sets receiving the awards will become the property of the AMERICAN AMATEUR PHOTOGRAPHER, and will be loaned to the principal photographic societies. The remainder will be returned at the expense of the competitors, *if so desired, in writing.*

Entries close November 1, 1895.

English competitors will please send their sets to S. L. Coulthurst, Esq., 78 Collyhurst street, Manchester, England, before Oct. 10, 1895.

American competitors will send their slides to Alfred Stieglitz, 162 Leonard street, New York.

### "AMERICAN AMATEUR PHOTOGRAPHER" BEGINNERS' COMPETITION.

For the best photographs made by beginners, we offer the following prizes:

*First Prize:* Fifteen dollars' worth of photographic stock.

*Second Prize:* Ten " " " "

*Third Prize:* Five " " " "

One year's free subscription to the AMERICAN AMATEUR PHOTOGRAPHER will be awarded to each of the next seven competitors in the order of merit.

#### Rules.

**Rule 1.** All entries must be forwarded to Alfred Stieglitz, 162 Leonard street New York, and marked "Beginners' Competition."

**Rule 2.** The name of photographer, with title of picture, to be legibly written on back of each mounted photograph.

**Rule 3.** The competition is only open to those who started practicing photography since July 1, 1893.

**Rule 4.** All pictures must be sent prepaid.

**Rule 5.** The whole of the work must be that of the competitor, and must be mounted.

#### Notes.

The editors reserve the right of publishing reproductions of any of the photographs submitted.

No competitor shall receive more than one prize.

Pictures will not be returned.

All pictures entered for competition must be received by October 15, 1895.

Judge: Alfred Stieglitz.

Just as we go to press we are notified of the death of Verta La Crosse. We regret to have to notify our readers that no more articles from his facile pen will appear in our columns. He died of adverse criticism.

*"Index Rerum Photographic," by Dr. John H. Janeway, U. S. A., continued from page 434, Vol. VII.*

flowers, the light passing through the leaves delineating every ramification of the nerves." Considerable improvement in point of sensibility was obtained by Mr. Talbot in the following year (1840) by the employment of iodide of silver on paper, as a foundation to be washed over with a mixture of aceto-nitrate and gallo-nitrate of silver, just previous to exposure in the camera. Paper so prepared was so sensitive that an exposure of less than a second to diffused light was enough to produce an impression. After exposure and development the paper was washed and cleaned by immersion in a solution of bromide of potassium. Niepce and Daguerre accidentally discovered that they were conducting experiments of a kindred character, and shortly afterwards entered into partnership, the former, however, dying in July, 1833. A new deed of partnership was signed between his son, Isidore, and Daguerre, which resulted in the publication in July, 1839, of the process known as the Daguerreotype. This was not done, however, until the French government had passed a bill bestowing pensions on both. The discovery of the Daguerreotype may be said to have arisen from the dissatisfaction entertained by Daguerre with the insensibility of the bituminous surface of Niepce, which induced him to turn his attention to the salts of silver as a means of producing a higher degree of sensitiveness. This he attained by exposing a highly polished plate of silver (attached for greater strength to a copper plate) to the vapor of iodine, by which pure iodide of silver was formed on the surface. The plate so prepared was exposed in the camera for a length of time (twenty minutes) which was then considered very short. No *apparent* effect was produced on the plate, the image being a latent one. The latent image was afterwards developed by exposing the plate to the vapor of mercury; and it is this development of a latent image, reducing as it did the time of exposure from hours to minutes, which truly constituted a new era in the science of photography. It is further due to Daguerre to state that while his processes for the purpose were imperfect he still succeeded in rendering his picture permanent, although it was reserved for Herschel to announce the great suitability of the hyposulphites for dissolving the haloid salts of silver. The sensibility of the silver plate was still further increased by Mr. Goddard, who suggested, in 1839, the association of the vapor of bromine with that of iodine; while M. Claudet, in 1840, employed chlorine. It is a remarkable fact in connection with the discoveries, that the older Niepce should, so early as 1820, have tried the treatment of the silver plate with the vapor of sulphur and phosphorus. But the progress of the art received a very important impulse from a discovery which at first scarcely appeared to have any connection therewith. In 1833, Braconnot gave in the "An-

nales de Chimse" an account of a new substance obtained by the action of nitric acid on starch, sawdust, linen, and cotton wool, which he named xyloidine; it was very combustible, and burned without any residue. In 1838, Pelonze suggested its application in artillery. Dumas, in 1843, proposed its use in fireworks, and proposed the name of nitramidine. In 1846, Schoubein, the eminent Prussian chemist, read a paper before the British Association on the preparation of explosive cotton, a substance obtained by acting on ordinary carded cotton by a mixture of strong nitric and sulphuric acids. This explosive cotton was afterwards found to be soluble in ether, and the solution so prepared was named collodion by its discoverer, Maynard, who, in 1848, published in the *American Journal of Medical Sciences* the formula for its preparation. This ethereal solution, having a certain proportion of alkaline iodides and iodide of silver added thereto, constituted the collodion first employed by Scott Archer, who, although deserving the credit of having first arranged a practicable working process with collodion for its basis, without which photography could not have obtained its high position. But Le Gray, of Paris, working in the same line, was the first to publish an account of collodion as a photographic agent. In 1841, Fox Talbot patented his process, known in this country as the Talbotype. It is due to the Rev. J. B. Reade to credit him with recommending a developer, but Fox Talbot was the first to use a restrainer. Up to 1848 paper negatives alone were in use. When Niepce d' St. Victor, a cousin of the original Niepce, proposed what was known as the Niepcotype, or albumen process, glass plates of proper thickness, quality, and perfectly clean, were coated with albumen to which an alkaline iodide was added. When perfectly dry they were immersed in a solution of nitrate of silver. The plate was then freely washed with water, dried, exposed, developed with gallic acid and cleared with hyposulphite of soda. These plates were, however, very insensitive, and numerous substances, such as starch, gelatine, gum, etc., were suggested, but unsuccessfully. The wet or collodion processes presented many disadvantages, especially in field work. The necessity of exposing the plate while wet compelled the employment of cumbrous apparatus in the shape of a dark tent, etc. The Abbe Despritz suggested to wash off the free nitrate of silver from the surface and allow the film to dry in the absence of light. This was called the dry collodion process. These plates were less sensitive to light than the wet. A variety of agents have been used to preserve the film, such as sugar, malt, tannin, etc. In 1864 a modification of the dry collodion process was proposed by Sayce and Bolton, of Liverpool, but attracted little attention till 1871. It consisted in forming an emulsion by the addition of bromide of cadmium and nitrate of silver to collodion. This was poured on a plate, washed and immersed in any of the preserva-

tive solutions and exposed wet or dry. Plates so prepared were very sensitive, and possessed the great advantage of being capable of development without nitrate of silver, pyrogalllic acid, ammonia and bromide of potash bringing them up to printing density. Major Russell, in 1862, discovered the use of the alkaline pyrogallol as a developer and accidentally the restraining power of the soluble bromides, both of which gave the first impulse to the preparation of the bromide silver film, which could be exposed dry. In 1871, Dr. R. S. Maddox published the first account of a gelatine emulsion. Jan., 1874, it was discovered that the emulsion could be washed previous to use. But, when, in 1878, Charles Bennett discovered that the power of increasing the sensitiveness of emulsions lay in digestion at high temperature and proved the capabilities of the process, its advance was most rapid, and aided by the ammonia process, the production of rapid films and plates became an everyday occurrence. Of the possibilities of photography, it would be hazardous, in view of what it has done in the last decade, to fix a limit. Of all its applications to everyday life, it would be almost impossible to narrate. To describe clearly all the processes that enter into the industrial arts would fill several volumes of a good sized book alone. Many applications of photography are noticed throughout this index, but its onward march is so rapid that the ink used describing one process is not dry before others are announced.

**PHOTO-GRAVURE PROCESS**—Depending upon the fact that light under certain conditions hardens certain organic substances, such as gelatine, in this process, the oldest printing material, copper, and the oldest method of printing is employed, but the action of light takes the place of the engraver's tool. The result desired to be obtained is an intaglio plate, to be engraved by photography and to be used for printing on a copper plate press. A copper plate is first dusted with resin or asphalt, which is melted by heat, or the ground is laid as in the aquatint method, in order to give it "grain," so that it will have an ink holding capacity. It is then coated with a thin layer of bichromated gelatine made sensitive to light, and exposed under a positive or transparency in order that the final picture may be a positive. The plate is then immersed in the etching fluid, which will penetrate the gelatine where light has not acted and where therefore the gelatine is not hardened. It will penetrate less where the light has hardened the gelatine slightly, and it will not penetrate where the gelatine is altogether hardened by light. In this way the plate is etched more or less deeply, according to the gradations of the photograph, and therefore reproducing all the gradations of the photograph, giving the print the characteristic features of strength and richness. The rest of the process is the ordinary method of copper plate printing.

**PHOTO-LITHOGRAPHY**—Is the process by which a stone is prepared for ordinary lithographic printing by photography instead of by hand, and is divided into two general divisions—photo-lithography in line and photo-lithography in half-tone. The first process is for making photographic reproductions of a subject in black lines on a white ground, half-tones and shadings being indicated by hatching or stipple, but no washes of color are permissible. The object sought for from such a subject is to produce a transfer which can be laid down upon stone or zinc, and proofs printed therefrom in the ordinary lithographic press or machine. There are three methods. By printing upon paper prepared with bichromated gelatine, the lines of which, after exposure to light under a direct negative (in a negative taken without a mirror behind the lens) will retain ink, whilst the gelatine protected from light absorbs water and rejects the ink. The result is a replica of the original in fatty ink, and may be transferred to stone or zinc and printed from in the usual method. In the second method a print is made upon zinc from a reversed negative in bichromated albumen, which is rolled up in transfer ink, and from that a transfer is pulled on Scotch transfer paper, which may then be transferred to stone or zinc and printed from a press or machine. In the third and by far the best method the print is made from a reversed negative on zinc, in bitumen, then rolled up in transfer ink, the transfer pulled on Scotch transfer paper, then transferred to stone or zinc and printed from at a litho-press or machine.

**IN HALF-TONES**—The process of the Messrs. Bullocks comprise the printing from grained stone tile or a stone upon which has been laid a transfer from a stipple plate, or a plate engraved in lines or dots upon sensitive transfer paper in stiff ink. The sensitive paper with such imprint upon it is exposed to light under a negative, the specks of ink forming a medium for breaking up the half-tones. Half-tones may also be made by making from a proof pulled from a machine stipple or a rolled plate or a grained stone a wet collodion negative, which, being stripped from its glass support, is placed between the half-tone negative and the sensitive surface, zinc coated with bichromated albumen and with bitumen, or either of the transfer papers. The result will be a grained transfer. Fine results in breaking up and transferring to stone the delicate half tints of a photograph from Nature are obtained by a modification of the collotype process, known as ink photos. See Wilkinson's Photo-engraving, etc. Husband's papyrotint process—which see—is another process for the production of photo-lithography in half-tone, direct from the negative, without the intervention of the collotype plate from which to pull the transfer, and is a direct step in advance.

**PHOTO-MECHANICAL PRINTING**—All practical photographic methods and processes depend on the action of light on one or other of two substances. Light under certain conditions blackens certain salts of silver, and under certain conditions hardens certain organic substances, such as gelatine. By the first action our negatives are produced, from which we obtain our prints of silver photographs. By the second action printing plates are produced, from which we print with ordinary printing ink. The application of the latter action is the foundation of the various photo-mechanical printing processes. All these depend on both actions of light—first, in the production of the negative; second, in the production of the printing plate. There are four leading lines of photo-mechanical printing methods, photo-engraving, photo-lithography, photo-gelatine and photo-gravure. In this country photo-engraving is understood to mean “cuts to print with type.” Photo-lithography is the process by which a stone is prepared for ordinary lithographic printing, by photography instead of by hand. In both of the above, the prints must be made in dots or lines, but by an ingenious device the half tone of the photograph is closely imitated. The photo-gelatine process is known under a multitude of names; albertype, autotype, lichtdruck, indo-tint and collotype are some of them, but they all mean the same thing, that’s printing from the surface of a layer of gelatine, variously supported, and on which a printing image has been produced by light. The *modus operandi*, in broad principles is simple enough, and as follows: 1 oz. of gelatine is dissolved in 10 ozs. of water at a temperature of 100° F. To this solution is added 40 to 50 grains of bichromate of potash and sufficient alcohol to make an easy flowing liquid. This is flowed over a plate of glass or metal and dried in an oven at a temperature of 120° to 140° F. on a level plate, so that when dry a very thin even solution of bichromatized gelatine remains on the plate. The gelatine coated plate is exposed to light under a negative, and now comes in the second action of light; the light passing through the negative hardens the gelatine in the shadows, partly hardens it in the half tones, and produces no effect where it is prevented from penetrating by the opaque parts of the negative. The gelatine coated plate, which now has the printing image produced on it, has only to be washed in water to prevent further action of light, when it is ready for the press. It is inked up in the same general method that a lithographic stone is inked. But the sun has been the artist, and has drawn the half tones of the photograph as no hand could have done it. To the reader and onlooker photo-gelatine printing seems to be the simplest thing in the world, but the longest worker in it will tell you that on account of the “contrary” character of gelatine, it is the most difficult. The reproductions by this process have a character all their own, and for a certain delicacy of results and true photographic effect they are



unapproachable. The photo-gravure process has been described in full above.

**PHOTO-MICROGRAPHY**—The art of photographing the image of a microscopic object, which image has been enlarged by the microscope, is called photo-micrography, in contra distinction to the art of producing microscopic photographs of large objects, which require the aid of a microscope to render the details visible. Dr. J. W. Draper, of New York, is supposed to have been the first to take photo-micrographs by the daguerreotype process, as he was the first to take portraits by this method, since which time thousands have probably practiced this art, abroad and at home. In this country Draper, Rood, Fowler, Deames, Rutherford, Seiler, Mercer and Col. Woodward, Drs. Curtis and Sternburg, of the army, stand prominent as masters of photo-micrography. The object of photo-micrography is to produce a faithful photograph of the enlarged image of a microscopic object, which shall not only show everything apart from color, that we can see in the microscope, but even more, as it is the most reliable and easy way of making faithful records of the appearances and measurements of microscopic objects, be it for illustrations of scientific books or for lantern slides for lectures, or for supplying evidence in law courts in cases of adulteration, forgery, murder, etc.; its importance is obvious. In the domain of botany, biology, physiology, pathology, bacteriology, chemistry, petrology, etc., and in fact, wherever the microscope is used, there photo-micrography is destined to become daily of more service and importance. The method of taking a photo-micrograph consists chiefly in the following operations. Focussing and illuminating the object in much the same way as for visual examination, connecting the eye-piece end of the microscope with the camera; focussing the image on the ground glass; replacing the latter by the holder containing the sensitive plate and making the exposure, and finally developing the negative. To command success in photo-micrography requires not only the possession of a good microscopical apparatus and camera, but also an intimate acquaintance with the principles of microscopical illumination for photography, which depends for correctness first of all upon the choice of the illuminator, and secondly, upon its proper adjustment and focus, and also upon the relation of the aperture of the condenser to that of the objective, the rule being that the aperture of the condenser ought to be the same as that of the objective if we wish to obtain critical images.

**PHOTOGRAPHING PHONOGRAPH**—An invention which has been foreshadowed is exhibited by Mexico. By speaking in a photophone transmitter, which consists of a highly polished diaphragm reflecting a ray of light, this ray

*To be continued.*

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## SALE AND EXCHANGE.

[This department is for the benefit of SUBSCRIBERS who have photographic material, apparatus or books which they wish to exchange, and such wants will be inserted free of charge one time. For each additional insertion we will charge one dollar per month. Dealers advertising in these columns will be charged double our ordinary advertising rates.]

The undersigned will purchase at reasonable prices original negatives, or copies of same not heretofore published, of still life, landscape, marine and other original and unique subjects of living figures and groups. Send copies, with price, to C. W. Grosch, 200 West 123d St., N. Y. City. Subjects not accepted will be returned in good condition, unused.

*Lenses*—5x8 and 6½x8½. Ross Portable; 7x9 Ross Rapid, with Bausch & Lomb Shutter; 8x10 Waterbury, and 6½x8½ Eastman Roll Holder, and 17 F. W. Plate Holders. All nearly new. Low price. "S. C.," 192 Twelfth Street, L. I. City.

*For Sale*—A genuine and specially fine No. 3 Darlot's Rapid Hemispherical lens for 6½x8½ plate. Splendid for instantaneous portraits, views, etc. Will cover 8x10 sharp to corners, with small stop. Price, \$30.00. *Is brand new.* For cash, \$22.50. J. D., Box 1522, Boston. Mass.

*For Sale*—4x5 Optimus R. R. Lens, fitted with Prosch Shutter, in perfect condition. Price, \$18.00. Address, E. G. Tremaine, 164 State St., Brooklyn, N. Y.

*For Sale*—One Entrikin Eureka Bur-nisher, inch roller, and 1 paper cutter, 6 inch, both as good as new John E. Davis, Butte, Mont.

*For Sale*—The following lenses, all new: Beck R. R., No. 5, 8x10 Iris, \$50; Ross W. A., No. 5, 10x12, \$32; Ross Rap. Sym., 9 in., 5x8, Aluminum, with

Bauch & Lomb Shutter Aluminum, \$46; Swift Rap. Paragon, 5x8, with Bauch & Lomb Shutter, \$39; Morrison W. A., No. 4, 5 in., 5x8, \$9; Busch Pantascope, No. 2, Extreme W. A., List \$30, at \$15; Gray Landscape, No. 3, 6"x8", \$6; French W. A., 5x8 (Importer's Name), List \$20, at \$12; French Single, 6"x8", \$5; Beck W. A., No. 2, 5x7, \$22.50. W. H. Gray, 521 Forest Ave., Oak Park, Ill.

*For Sale*—A Ross Universal Extra Rapid Lens, 10x12, and Columbian triplex shutter. List price, \$139.50: will sell for \$100. Also a 4x5 C daylight Kodak, with plate attachment, 3 extra plate holders and roll holders. List price, \$33.00; will sell for \$18.00. Address, Albert Burnton & Co., 49 Sixth Ave., New York City.

*For Sale*—The Platinotype Company's electric light, solar, contact and art business. Will be sold outright or worked on shares. Here is a chance for some one to step right in and commence business. Address, Willis & Clements, 1624 Chestnut St., Philadelphia, Pa.

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Amateurs who intend to contribute to the exhibitions should use Willis & Clements' new Rough Surface Cold Bath Platinotype Paper. Nothing has ever approached it for art effects. See ad. on page xv. Yours very truly, Willis & Clements.

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American Agents for Sprange's BLUE BOOK for AMATEUR PHOTOG-  
RAPHERS (the New Photo. Directory), for 1894.



By J. Ozdie Akman.

· A DUTCH DOG CART

THE  
AMERICAN AMATEUR PHOTOGRAPHER,

VOL. VII.

NOVEMBER, 1895.

No 11.

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The London Exhibitions.

BY GEORGE DAVISON.

**RECENT 1895 Exhibitions.**—The great photographic events of the month in London have been the opening of the two leading exhibitions, which occur together every autumn. At the one, organized by the Royal Photographic Society, we have the usual interesting collection of photographs and process work, together with some novelties in apparatus. At the photographic salon, organized under the auspices of the usual international committee of photographers, there is a further step made in showing the pictorial capabilities of camera craft.

**International Photographic Art Exhibitions.**—The annual photographic salon in London, we are glad to think, is becoming more and more a matter of interest to

"SUMMER DAYS."

foreign photographers. This is no doubt due to the attempt made to give an international character to the movement in pursuit of pictorial photography. It is noticeable that there appears to be something electrical about the contact of the artistic photograph. Take the case of a portfolio of prints in which some attention has been given to composition, selection of subject, light and shade, atmospheric effect, artistic beauty; in short, when such a portfolio is displayed to an individual, or a group of individuals of any culture, the effect is always one of astonishment. Their previous conception of a photograph has probably been derived from a knowledge or observation of show case portraiture, and local views made with an industrial and not an æsthetic aim. The



same thing obtains when the company consists of painters or draughtsmen, provided always that they have not been prejudiced by any clique which is jealous of the part played by photography in illustrations and graphic representation. This influence of an artistic photograph being what it is upon outsiders, it is not surprising that it should be even more marked in its consequences with actual practitioners. Many amateur and professional photographers have some slight foundation of art education and considerable natural taste, and those qualities or training which go to make up what we call the æsthetic faculty. With such, the effect of the first contact with artistic examples is magical, and the after result is soon seen in personal effort of their own, quite different from that which they produced whilst the beauty of the process and the mechanical perfection of results were the chief interest.

It is in this way that the artistic movement has made great advances amongst us here and in other countries. There is undoubtedly a strong bond of sympathy amongst those who feel enthusiasm in this movement, and we trust that the hope of making it really international and cosmopolitan will be possible of realization. The institution of photographic art exhibitions in the great cities has been very productive of new and original workers and better pictures. It is in these exhibitions that we get an opportunity of noting changes and progress.

The salon this year is a case in point, and the new work from France, Austria, Belgium and America help greatly to make the exhibition what it is.

**Arrangement of the Salon.**—The Dudley Gallery, where the exhibition is held, is rather a small gallery, with a fairly good and not garish light. Its decorations, such as exist, are quiet, but not very distinctive. Another year the Secretary hopes that something more pleasing and novel may be done in the way of treatment of the room. As it is, the space is divided into bays by the fixing at intervals of covered divisions with three faces. These dividing blocks stand out about twelve inches from the wall, and themselves serve to receive small pictures on each of their three faces. The object of these divisions is to break up the monotony of the long walls, and to give opportunity for more effective grouping. The general plan adopted is to give some slight distinctive character to each bay or space between the divisions, the centers being planned with large work and other pictures of kindred character being grouped around with slight spacing. No doubt more original methods might be thought out, but so long as the individual exhibits are framed and mounted in a quiet style, it serves the purpose fairly well. Quietness and harmony of general appearance are the most important points, and here we would cordially invite all exhibitors to consider the gain to their

"A MISSTEP."

By Theo. R. Hugo.

*First Prize, "Beginners' Competition."*

own pictures as well as to the gallery in the adoption of the system of close framing. The frame may be wide and give scope for great selection in regard to suitable color and form of moulding. There are cases of pictures which may be best with a white mount, but it is more particularly in local decoration that they occur, and certainly in a gallery the effect of the white or light staring mounts is spotty and unpleasant to a degree, and killing also to the picture they enclose. There are far too many photographs treated in this way at the Salon. Another defect is that the spacing of the pictures is very slight. It is something in so small a gallery to have been able to adopt even so trifling a spacing, but

with a more rigidly selected collection further improvement might be effected.

**The French Exhibits.**—The very interesting exhibits sent from France form one of the new features of the exhibition.

Two years ago it was not known that there were any photographers in France specially interested in producing artistic photographs. Possibly, there, as here, many were quietly working without exhibiting. Now we no doubt have to thank the Paris exhibitions of the past two years for bringing into prominence the talent of our French confreres, and we rejoice to see it. We shall not be surprised to find

By A. N. Welton.

"OLD DAM,"

*Honorable Mention, "Beginners' Competition."*

grow up in Paris a school of workers more distinctly artistic than that of any other country.

The majority of our exhibitors are amateurs, whose work is chiefly a spasmodic groping after striking effect, and therefore only a very small percentage can possibly show evidence of close practical artistic education in their pictures. In England and Austria there is much tasteful work done, beautiful and natural in its qualities; in France we may hope to see a more academic and decorative style in conjunction with the natural charm inseparable from the drawing done by the camera.

Amongst the most delightful things we have seen, we number the exhibits sent by M. Demachy. "Jeunesse" and "Rouen" are examples, in which the images in the gum-carbon prints have been developed selectively, apparently by means of brush, and with striking effect. In two other head studies an equally pleasing result has been secured by clever arrangement, and apparently without any special brush treatment.

M. le Begue sends some exquisitely decorative figure studies, gaining their effect even with considerable complication of accessories. M. Puyo has a most striking picture of the nude in the act of yawning, the light behind a seated figure being so managed as to invest the subject with artistic interest without too much sacrifice of naturalness of effect. It is per-

By Howard Grey Douglas.

"SOFTLY FALLS THE EVENING LIGHT

*Third Prize, "Beginners' Competition"*

haps a little deficient decoratively, and might have been given more distinction by a better printing treatment. In his "Fantaisie en Blanc" M. Puyo has treated delicately and elegantly a delicate and elegant subject. In "Vengeance" the lighting and general composition are fine, but the face of the figure rather fails to suggest a critical moment of "Revenge," as also does the feeble grip of the dagger. But M. Puyo is a most welcome addition to the number of new and clever exhibitors amongst us, and we are also glad to see the pictures of Messieurs Bergon, (similar work to that of M. le Begue) Bucquet, Brémard and Bourgeois.

Monsieur J. Quentin, of Arras, shows somewhat defective treatment in method of printing and mounting, but the selection and arrangement show promise.

**The Austrian Exhibits.**—As usual, Dr. Henneberg and Herr Watzek are very strong exhibitors, the former with some effective landscapes, printed chiefly in a rich brown color, and the latter with a telling study of a rugged head ("Michel"), and a graceful landscape of trees, sketchily developed apparently by the brush platinotype method. This last subject is not unhappily shown with a light colored mount, partly by reason of its vignetted treatment, but Dr. Henneberg's strongly printed subjects would have greatly gained by close framing, with a very broad moulding of suitable dark color and form. The same remark applies to many of the Viennese exhibits, and perhaps most of all to the unusually fine study of a head by Herr Heinrich Kühn. This is one of the best portrait studies in the room, but it is robbed of some of its effect as it hangs, by the style of broad light mount that it is mounted upon. Herr Kühn has not shown here before, and both in his landscape and other work he has created, together with Messieurs Demachy and Puyo, of Paris, and Mr. Day, of Boston, the strongest impression of all the new exhibitors this year. Of other Viennese exhibitors Herren Buschbeck, Scharf, David and Schoeller are well represented, particularly Herren Scharf and David, and good work has been sent by Drs. Strakosch and Mallmann.

**American Exhibits**—Although only five contributors from the United States are represented in the Exhibition, there are some points of interest in the photographs sent. Mr. Day, of Boston, is a new exhibitor in England, and, indeed, perhaps anywhere, and he may be an example of many other workers who use their camera to please a natural craving for art production, but do not care for the turmoil of exhibiting. There may be a goodly number of quiet workers of this description, but we hope that all those interested in the cause will assist in bringing forward such interesting and charming work. Mr. Day's department is in figure work, portrait and character studies, and in all he has executed he displays a delicate taste, a perception and feeling for the beautiful, some

By Frank Elliott Mathewson

"WHERE THE WATER LILLIES GROW "

*Second Prize, "Beginners' Competition "*

talent in arrangement, and thought and care in lighting. In some cases he has been quick to perceive a quaint and fantastic effect, and has partly succeeded in bending the photographic method to express something of the feeling and character of the work of certain of the pre-Raphaelite painters. In saying this we do not say that such imitation is a desirable proceeding, save as an interesting exercise, but it serves to show what we have often suggested, that photography can be pressed into giving from

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By Howard Grey Douglass

"A REMINDER OF FEUDAL TIMES."

*"Beginners' Competition."*

Nature something of any and every style which has been known in art. What it can do second-hand, as it were, it may be made to do direct and each one can find scope in it for his own individual style.

Of the other exhibitors, Mr. Stieglitz is the only one strongly represented, his most effective picture being one of two old people, apparently Normandy peasant women, hurrying towards a convent building. Whatever the particulars, however, it is the suggestion of movement conveyed

in the picture, and the pleasing and rich quality of the printing, that attract attention. The best of the remainder of Mr. Stieglitz's exhibits we think, is that entitled "On the Banks of the Seine," where a very decorative effect has been judiciously secured by the composition and trimming.

Mr. Clarence Moore shows a quiet, pleasing picture, suggestive of ebb and evening, Mr. Huntington a gracefully treated figure study, and Mr. Eickemeyer a not unsuccessful little story in figures, partly amusing and perhaps a little trivial.

It occurs to us at this point to renew the suggestion that it is time that a pictorial exhibition, on the same lines of strict selection as those held in Paris, Vienna, Brussels and London, should be organized in New York. Given the question of gallery satisfactorily settled, there is no doubt but that by previous co-operation with the chief workers in the centers named, a representative show could be organized. Transit and framing might be difficulties, but not, in our opinion, insuperable ones. Such an exhibition would probably have considerable effect just now.

**Other Exhibits at the Salon.**—One of the features of the Salon this year is the number of pictures showing attempts to treat the nude artistically by photography. In addition to those already named, M. Alexandre, of Brussels, sends a very cleverly managed study, and Messrs Langfield and Collins each exhibit figures outdoors amongst foliage or bathing.

There is quite sufficient success to indicate that the nude can be well treated by photography; better, indeed, than has yet been shown.

By W. O. Pearson.

"THE END OF THEIR JOURNEY."

*Honorable Mention, "Beginners' Competition."*



Of the rest it must be sufficient to briefly refer to the work of the leading home exhibitors. Mr. Calland has a marvelously skillful little study in light and tone, as well as in decorative composition, of a London street scene—omnibuses, ordinary town street houses and shops. Mr. Craig-Annan shows an effective picture of a lady in brown, a full length figure in the quietest of tones, very decorative, as well as natural. All Mr. Annan's work shows quiet, harmonious treatment right through, even to the appropriate framing. Many other exhibitors are exceptionally strong this year. Messrs. Hollyer, Cameron & Crooke show excellent portraiture, whilst in landscape Messrs. H. P. Robinson, K. Greger, A. H. Hinton, Lambert, Burchett, Gale, and others add distinction to the exhibition, each in his own particular style.

**Exhibition of the Royal Photographic Society.**—At this exhibition pictorial work does not much abound, but considerable interest attaches to some of the practical and technical exhibits which are displayed. However, Mr. Hollyer, who was one of the judges, has a fine portrait of himself, the best portrait picture seen this year, very distinctive in arrangement, and quiet and natural in character. Mr. Stieglitz is awarded a medal for the picture, already reviewed under the salon paragraphs, and this gives occasion for raising rather a strong objection against sending exactly the same pictures to two exhibitions which are open concurrently in one place.

Neither exhibition cares to receive exactly the same exhibits as the other, and perhaps workers ought to be sufficiently fertile to share their year's work if they desire to send to both shows. The other picture medallists are Messrs. Bennett, Fry, Cembrano, Sinclair, Lee and Keene, whilst the perfect industrial architectural work of Messrs. Bolas & Co. is similarly signalized, and also the lantern slides of Mr. Marriage, the wonderful telephotographic pictures of wild birds in and around their nests, done by Mr. Lodge, the recent splendid inventions in lenses of Mr. Dennis Taylor, and a life size view of a white starling by Mr. Bush.

Amongst the other most interesting exhibits the three-color collotypes by Messrs. Bolas and Wall are marvellously realistic in color, and if commercial prints could be easily turned out similar to this exhibition example, a great advance would be assured.

Ceramic photography, now somewhat in course of revival here, is well represented in the exhibits of Messrs. Morgan and Kidd and R. F. Barnes; photo-micrography by two or three exhibitors, and fine reproductions of pictures in carbon as well as in photogravure by the Autotype Company and others.

Messrs. Penrose & Co. have an exhibit to prove that fine half-tone negatives can be made on dry plates.

Mr. E. Sanger Shepherd shows some irregular grained screens, and Mr. Hepworth a new hand-feed electric arc lamp for optical lanterns.

A new point of the exhibition is the illustration of the catalogue by means of a very large number of line and half-tone reproductions of the pictures exhibited. The catalogue is done in very inferior style, but these illustrations add an interest to it.

One of our contemporaries gives an approximately comparative table of the printing processes used by exhibitors for direct work, which shows the present preference for the permanent processes of carbon and platinotype :

Platinotype . . . . .	185	exhibits.
Carbon . . . . .	110	"
Gelatine chloride . . . . .	41	"
Bromide . . . . .	26	"
Photogravure (exclusive of reproductions) . .	22	"

By F. Hurdall.

‘JUST LOOK AT YOURSELF NOW.’

*Honorable Mention, "Beginners' Competition"*

Look out for our next number! The December issue of the "American Amateur Photographer" will be a revelation to those fortunate enough to get it.

## American Amateur Photographer Beginners' Competition.

THE AMERICAN AMATEUR PHOTOGRAPHER Beginners' Competition closed on October 15th, as announced. The result has certainly been very encouraging, as 128 photographs were entered by twenty-eight competitors. After a very careful examination of each photograph the lot were judged on the following basis: General neatness, maximum, 10 marks; technical qualities, maximum, 30 marks; artistic qualities, maximum, 30 marks, originality, maximum, 30 marks.

Most of the photographs were clean, good photographs, but very few of them showed a tendency to pictorial work, and as for individuality and originality, all but eleven photographs were marked zero. The following is the list of awards:

By W. Hyde.

A HALL BEDROOM DEVOTEE."

"Beginners' Competition."

### *First Prize.*

Theodore R. Hugo, Bridgeport, Conn. "A Misstep,"

### *Second Prize.*

Frank Elliott Matthews, Chicopee Falls, Mass. "Where Water Lilies Grow."

### *Third Prize.*

Howard Gray Douglas, Washington, D. C. "Softly Falls the Evening Light."

### *Honorable Mention.*

(A year's subscription to the AMERICAN AMATEUR PHOTOGRAPHER.)

F. Hurndall, Smith's Falls, Conn.

W. O. Pearson, Garland, O.

A. N. Welton, Springfield, Mass.

Arthur E. Mooney, St. Louis, Mo.

Geo. Brooks, Canton, Mass.

E. H. Newbury, T. H. Collins, Mystic, Conn.

In our next issue we shall shortly review each competitor's work.

## Beginners' Column.

CHAPTER XXIV.—SEEING.

BY JOHN CLARKE.

“**F**IRST catch your hare,” is as applicable to the production of a photographic picture as to the making of hare soup. No matter how thoroughly the photographer may be imbued with the canons of art, how perfectly he may have at his fingers’ ends the arranging of lines, the distribution of light and shade, and the production of all the other qualities incident to true pictorial work, he can do nothing without the necessary material. The painter may sit in his studio, and “out of his own head” transfer to his canvas pictures as beautiful as are to be found in Nature; but the photographer must go to Nature herself. And just here comes in the necessity for something that

Nature cannot teach him, or at least for which she supplies only the matter, while he must bring to it the mind—the power to see.

This is not a divine gift, although the ability to acquire it in the highest degree of perfection undoubtedly is; but the faculty of seeing sufficiently the picturesque possibilities of much, if not all, that the uncultured eye would pass by, may be acquired and cultivated by almost any one. Nature, as I have said in a previous chapter, does not pretend to be artistic, although she occasionally gives splendid examples of both composition and chiaro-oscuro; but in every corner of her domain, and in all her various aspects, she affords to the student who already under-

By Geo. Murt.

“WHOSE DRAMMA YOU ‘POSE I AM’”

“*Beginners’ Competition.*”

stands the effects of lines and light, material for thought and speculation. To acquire and cultivate the power of seeing there is no better way than by trying to see. The student should get into the habit of looking at every object in Nature from an artistic point of view. In sky, or earth, or sea ; in the quiet country landscape, and the crowded streets of the city, he should look for the lines and lights ; and, in the light that he has already acquired, try to distinguish between those that make and those that mar pictorial effect ; try to see in every group or portion of landscape just what lines need balancing, removal, or alteration, and just where lights and shades should be accentuated or toned down. At home and abroad he should see in everything a possible picture, and in a very short time he will be able to feel just what would be required to make it a perfect one.

Nor will the advantages of such study be available only as an aid to picture making. It will be to him as the acquiring of a sixth sense ; opening up a source of pleasure hitherto undreamt of, and giving to his walks abroad a charm greater than anything hitherto experienced. Just as the botanist has a pleasure known only to himself, in deciphering the story of every wayside weed, and the geologist delights in learning the genesis of the world from the stones over which others only stumble, so the artist who has learned to see has, as it were, entered within the veil, and Nature speaks to him in a charming tongue, but a tongue unknown to those who have not studied as he has done.

The difference between various classes of photographers is generally well in evidence at the so-called photographic outings. One, in for photography for all it is worth, and as ignorant of the principles of art as the cattle which he is always so anxious to get, fires off at everything which looks pretty, until his stock of plates is exhausted. Another has his heart set on *subjects* or *objects* ; a ruin of any kind being a specially acceptable tit-bit ; and is content to fill his plate with it from the first accessible point of view, with little attention to composition or *chiaro-oscuro*, because he knows little of either. Still another, with a fair knowledge of the essentials of a good composition, and more conservative than his fellows, but who has not learned to see, wanders about from spot to spot, point to point and subject to subject, grumbling at what he considers the mistake of the committee which selected the district, and—so far showing good sense at least—taking home all or most of his plates unexposed. The last—and he is few and far between—has mastered, so far as his abilities will permit, both the canons of art and the power to see. He knows that one good negative is better than many that are faulty ; considers negatives that need to be apologized for a waste of plates, and never knowingly so wastes one. He knows also that while composition may be,

to a certain extent, under his control, the light and shade is dependent on the position of the sun.

His first step, therefore, if he has not previously visited the ground, is to make a tour of inspection. His trained eye readily discovers the possible pictures, and they are generally more numerous than the untrained can believe, and he carefully examines the composition, the various seemingly suitable points of view, and considers what, if any, additions are desirable and possible to secure a sufficiently interesting foreground. In this he finds considerable assistance from the employment of a simple view metre; a strip of cardboard, about an inch wide, folded so as to make a rectangular opening, closely related to the proportional length and breadth of the plate, and of a size that when held a certain distance in front of the eye will show exactly the extent of subject included in the image on the ground glass.

Having satisfied himself as to the composition and marked the decided on point of view, he will turn his attention to the lighting, and especially the direction in which the shadows should lie; and, knowing the true orientation of the subject, he will be able to ascertain the exact hour or time at which the exposure should be made. If he has a doubt as to the true orientation, that is the direction in which lie east, west, etc., and does not carry a compass, he can have recourse to the now well-known method of ascertaining it by the aid of his watch.

In case some of my readers may not be acquainted with this old but recently rediscovered method, it is as follows: The watch, which must be tolerably correct, is laid flat on the hand, face up, and turned till the hour hand points directly

By A. E. Mooney.

"ROUNDING THE BLUFFS."

Honorable Mention, "Beginners' Competition."

to the sun. Whatever minute mark the hour hand may at the time be pointing to, exactly half the distance between it and the figure XII will be due south. For example, at this moment, 4.27 p. m., the hour hand of my watch is exactly over the 2 minute past IV. Between that and XII there are 22 minutes, and consequently the 1 minute after II points to south; in other words, a line starting from the center of the dial and crossing the one minute after two, would be running south.

I am aware that in this and the two preceding chapters, I have reversed the ordinary order of teaching, which is to get the pupil first to see the beauties of Nature, and then to learn the laws on which that beauty, or very much of it, depends. But it seems to me that it is both easier and more natural to know at the beginning what we are looking for, than to hunt in the dark, for we do not know what.

As I have said before, there are artists, especially some of the younger ones, who turn up their noses at the idea of laws or canons of art, and even some of the older and best of them affect to, and probably believe that they do ignore them; but art is no exception to the universal rule, that all creation is subject to law; and the instinct or "art feeling" on which they rely, is simply an obedience to those laws that they do not, or profess not to know.

But when all is said and done, when the pupil has acquired a thorough knowledge of what is required for the production of true pictorial effect, and learned not only to see it when it occurs in Nature, but to see the possibilities of producing it where it is not, he may still be far from able to make a fine picture. His technique may be perfect, his lines and lighting faultless, and yet something may be wanting, the absence of which prevents the result from being more than a mere mechanical reproduction. And unfortunately this "something" is something that cannot be taught. It can only be acquired, and from a close study of Nature in all her various moods. A picture in the true sense of the term, is not a reproduction, more or less faithful, of a natural scene, but rather a representation of the impression made by that scene on the mind of the artist, which is always very different from that produced on the mind of the uncultured. Bromet says: "Nature unveils herself only to him who can penetrate to her sacred haunts. The inquiry, 'what is beautiful and why?' can only be answered by him who has often asked the question," and the aim of the artist should be to reproduce what he himself sees, and so by his work help to lift the uncultured to the platform of the cultured.

From this it will be clear that the so-called canons of art, the laws of composition and *chiaro-oscuro*, all indeed, that can be taught, is but the skeleton; the means to an end, the "end" being a picture into which the artist has infused his impressions, feelings, individuality.

### English Notes.

**PAPER and Film Negatives.**—In our former notes reference was made, if we remember aright, to a new rollable film attached to paper, in course of production by an English firm. At present nothing more has been published concerning this, but the desire of many workers to make large pictures direct in the camera has just now kept attention on the subject. We recently received a communication from a friend abroad, from whom we gather that some artistic workers are using bromide paper in very lightly made large cameras to make direct negatives from Nature. We can quite see the special usefulness of such a method for some subjects, and have ourselves made reproduced negatives on both bromide and albumenized silver paper, to say nothing of the excellent prints produced by similar methods long ago. A writer in the *British Journal of Photography* (Sept. 27) gives some notes of experiments in making large paper and film negatives by the aid of formic-aldehyde. In one case a thin well-sized paper treated with formalin was, when dry, coated with emulsion, and gave good negatives equal to those on glass plates, the paper being rendered translucent by Canada balsam before printing. In the other case a thin sheet of Russian glue with which formalin had been incorporated, formed the support for the emulsion, and proved very efficient. Reference is made to the old bichromated gelatine film, which Mr. Vergara manufactured at one time in England; we have several of these negatives which we made at the time, but the film was too horny and has turned very yellow in color. Whether an insoluble emulsion paper having grain would meet with general approval is a doubtful point, but it would certainly be of service to the picture division for large work.

**Mr. Traill Taylor and Our Photographic Journals.**—This veteran photographic editor will shortly give up the editorship of the *British Journal of Photography*, and retire from active service. Meantime he is going a journey to America for a few months.

Some alterations also have taken place in the management of the *Photographic News*, and the editorship of the *Amateur Photographer* is about to undergo a change.

**The Polyorama.**—This is the name given to a form of lantern exhibition which is reported to have been tried in Melbourne. The device consists in arranging a number of screens in a semi-circle, each screen receiving its lantern picture from a separate lantern. By this means several views are in sight together; the lecturer is assisted in explaining a series of pictures of one subject or locality. The pictures suffer in brilliancy by reflected light. Perhaps the idea is not novel.

LONDON, Oct. 10, 1895.

GEORGE DAVISON.



## Autumn Musings and Photography.

BY WM. GEO. OPPENHEIM, PH. D., L. B.

THAT August gossip, the katydid, has stilled his scandal to the simple syllables "ka-ty," and all the other insects have fallen into a thin piping, so that the orchestra is no longer full.

This gradual stilling of the insects' music is characteristic of the true autumn; there are half a dozen other more or less subtle signs that are eloquent of autumn to the observer of outdoor things.

To most persons autumn means merely the season of gorgeous foliage, but there are indications less broad, though no less sure, the foliage has not as yet greatly changed from its midsummer aspect; indeed, individual trees, save in the case of some species, are still fresh and green.

The beach tans reluctantly; here and there a beach rooted in the thin soil has turned russet and is ready for that gradual winter day paling that will leave it at the approach of spring a ghostly semblance of its summer self, stiffly rustling as though its leaves were parchment; a few maples are turned red, and the dogwood shows its rich oval crimson berries among clusters of dim red leaves.

The sweet gum here and there shows deep purple stars; it is the most beautiful of the mid-autumn trees, which seem reminiscent of some woodland tragedy.

Forest tops seen in a mass faintly suggest the landscape bouquet that they will present a week after the earliest sharp frost.

Meanwhile the mellow ripeness of the hickory, the fluent crimson glory of the Virginia creeper, trickling, as it were, in vivid streams over its favorite background of pine or cedar, stand out poetic amid the greenery.

But the color of the foliage is but the broad and almost crude portion of the autumn pageant; its most persuasive charm lies in the glassy stillness of the weather.

The autumn world seems suddenly sunk into a mild, waveless, almost impalpable ocean, a dreamy sea in which all the functions of Nature proceed in mellow silence, a sea whose golden water stirs not the gossamer nor disturbs the bees fumbling the latest flowers.

Indian summer runs like a golden thread through the autumn from almost mid-September far into November and sometimes with rare re-appearances well toward Christmas.

Sharp, hard, unsympathetic days come in October and November like sober strands in the season's woof, but the golden thread appears and gives character to the high autumn.

It is a subtle atmospheric condition composed of frost and sunshine, a narcotic balm and pungent stimulant that makes the autumn of this latitude the loveliest in the world.

When one comes to make a further analysis of the autumn, one finds that the Indian summer touch of melancholy is the most spiritual element of the season's charm; then and only then does Nature seem to pause and show her sympathy with the sadness in the lives of men.

Spring is all hope, summer is riotous with joy, winter is boisterously self-sufficient, only autumn is thoroughly receptive, and into the aspects of Nature in that season man most readily reads the underlying sadness of his own soul.

Mingled with this sadness, however, is the unspeakable freshness of the autumn days; now, as ever, mornings and evenings are subtly expressive of the seasons.

It is well worth a night at a suburban hotel to catch the autumn morning of the suburbs at its best; sunrise comes sometimes at 6 o'clock, and an hour later the whole air is etherealized by the mist of the rising dews exhaled from surrounding meadows.

The woodland paths, thinly spread with new fallen leaves, are more than ever inviting to vagrant feet.

Whatever wild part remains in the blood asserts itself, and one is scornful of the laws against trespassing.

The whole suburban world seems rightfully his who has the feeling and the strength to cover it afoot, as "Books belong of right to him that knows best how to use them." It is one of the pleasant facts of suburban life that anti-trespass notices are unusual; one may usually yield to the vagrant instinct of one's feet and traverse unchallenged of man or sign-board whatever expanse of meadow and woodland the eye may take in.

If it does not suit the wanderer to pass the night in the suburbs let him rise early and walk the length of Central Park while yet the mysteries of the autumn night have not utterly fled before the sunlight; the occasional hum of wheels and the glint of spokes where some devotee of the silent steed takes his early morning spin, can scarcely destroy the illusion of a wild park miles away from the city's din.

The squirrels come down from their dens in the trees with quirks and coquettish noddings and backings and head-tossings and bowings, and show their tameness by accepting nuts from animal lovers, who watch their antics with ever increasing pleasure.

Every breath is an inspiring compound of autumnal spice and sea odors; there is a lift in the atmosphere that makes a man feel as if his blood was among the stars, and in the harbor and along the North River

opposite Claremont every moving thing seems to be aslant and every cat boat and tug seems to be instinct with life and color.

When shall we be able to preserve this beauty, form, color, sound?

The lens alone cannot encompass it. Shall we add to the camera a microphone and graphophone? Will chemistry solve the problem; or will we require the mechanician's aid?

What man—or woman—will put the world in debt forevermore by the doing of it?

Or is it not within the reason of possibilities?

Toil on, ye workers in the realm of unexplored dreams and aspirations. Who knows what may come of your efforts?

Who knows?

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## The Anaglyph and How It is Made.\*

BY A. F. WATCH.

EVER since the first sample anaglyph was issued with the *Revue de Photographie* in 1893, these new stereoscope pictures have created a great deal of interest and curiosity, and have incited several writers to make guesses as to the manner in which they are made. Some writers have described them as a production of chromo-photography, which is an error. Their description is that of Ducos du Hauron's colored lantern slides and transparencies, which differ greatly from his anaglyphs.

Other writers have pronounced these pictures simply a two-colored print from one negative or half-tone plate. This is even a greater error.

To produce a stereoscopic picture, no matter in what manner it is brought before the vision, *two pictures* are required, one of these pictures to represent the view of the right eye and the other to represent the view of the left eye. These two pictures, by superimposition, produce the stereoscopic effect of binocular vision.

The anaglyphs, which are simply improved stereoscopic pictures, require therefore for their production two images or pictures of the same object. These two pictures are obtained from *two negatives*, two reproduction plates, and two imprints.

The anaglyph does not involve, strictly speaking, a new theory, but only a new adaption of two well-known parts, viz :

Firstly : That a color is not distinguished or recognized when viewed through a transparent medium of a similar color.

Secondly : That an almost, if not complete, absorption or interception of light can be produced by the superposition of two transparent

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\* Read before the Photographic Society of Philadelphia, October 9, 1895.

media of complementary colors, such as green and red, blue and orange, etc. Also that a color will appear black, if viewed through a transparent medium of its complementary color.

From these two well-known facts, by their combination, Ducos du Hauron, among other inventions, evolved the anaglyph, by printing a two-colored picture from two half-tones reproduced from a pair of stereoscopic negatives. One of the pictures was printed in a medium dark primary color and the other picture was printed over it, but out of register, in a color complementary to that of the first picture. This two-colored blurred picture was viewed through pieces of transparent glass of the same colors as the pigments used in the printing; seen through these pieces of plain glass held before the eyes in a proper position the stereoscopic effect became apparent and the anaglyph was discovered.

The two prints in the anaglyph are not exactly one over the other, but are printed somewhat out of register. This register or over lap varies from almost nothing to a quarter of an inch and more, depending on the subject and the manner in which the negatives are exposed.

The media for viewing these pictures are called anaglyphoscopes, and consist of two pieces of colored glass, which may be held loosely in the fingers, or may be mounted in eye-glass or spectacle frames, or else in boards with hoods like the stereoscope.

But it does not matter in what kind of mounting the glasses are held before the eyes; if the colors correspond to the pigments in the prints the beautiful stereoscopic effect is brought out as completely with the loose pieces of glass as with the most elaborate anaglyphoscope.

These pictures possess also the great advantage over the stereoscopic pictures that they can be viewed simultaneously by a number of persons provided with anaglyphoscopes.

In the present anaglyphs the picture corresponding to the view of the *right eye* is printed with *red ink*, and will appear almost black when viewed through the *blue glass* in the right side of the anaglyphoscope, but it will be invisible to the *left eye*, which is covered by the *red glass*. Similarly the superimposed blue picture, which corresponds to the view of the left eye, will be visible to the left eye only. Thus, each eye sees only its proper picture, representing the views of the right and left eye respectively, and not being exactly superimposed, produce the stereoscopic effect of binocular vision.

The pictures are printed out of register enough to produce the stereoscopic effect, and near enough in register to avoid double vision.

The making of anaglyphs involves a great deal of trouble, and requires the aid of an artisan whose field lies entirely outside of the photographic art; but the making of the negatives for these pictures is, however, within

the scope and power of any amateur. A short description of the *modus operandi* may be of interest.

The negatives for anaglyphs are made either with an ordinary stereoscopic camera or with two larger cameras; but the larger, say 40 x 60 inch negatives, as well as smaller ones, are made best with a camera fitted on a sliding bed on the tripod.

It is not necessary to describe the working of the stereoscopic camera which can be used for pictures up to 4 x 4 inches.

If negatives larger than that are desired, the camera on the sliding bed is preferably used, in the following manner :

One exposure is made with the camera slid to one end of the bed; then the camera is slid, right or left, a distance of from three to nine inches, depending on the subject, and then *another* exposure on *ANOTHER PLATE* is made from this second position. Thus, stereoscopic negatives of any required size can be made.

With a camera not fitted with a sliding base or bed the exposure can be made by moving the camera and tripod the required distance to the right or left, in which case care should be taken to preserve the same elevation and horizon, and to move it along an arc of a circle, the center of which is the center of the subject, and the distance from the center of the subject to the camera the radius.

The distance of this lateral movement of the camera varies according to the subject. For a view in which there are several objects, planes, or angles, the displacement of the camera should not exceed three inches; but for single objects, as for instance a statue of a single figure or a portrait of a person, the lateral displacement may be increased to nine inches, in which case two cameras side by side, with the lenses nine inches apart, could be used simultaneously.

From the negatives thus obtained, strong half-tone plates or reproductions are made, from which the anaglyphs are printed in a letter press.

The clearness of the pictures depends largely upon the quality of ink used in the printing, as well as upon the finish of the surface of the paper on which they are printed.

A recent letter from the inventor informs the writer that the anaglyphic lantern slides have been perfected, and that samples of them will be forwarded to this country ere very long.

In conclusion, it may be mentioned that the claims for the use of the anaglyphs include with the photographic reproductions, also paintings painted, woven and printed articles, such as ceilings, carpets, wall papers and cuts which are enlarged or copied from anaglyphic patterns. This process of stereoscopic effect was patented in the United States last August.

# THE AMERICAN AMATEUR PHOTOGRAPHER.

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ALFRED STIEGLITZ.

EDITORS

F. C. BEACH.

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## Editorial Comment.

*Preservative for the Metol Developer.*—We have observed that the preservation of metol in solution, by means of sodium sulphite, is not of long duration, particularly if a bottle half to three-quarters full is left standing for some time. Gradually such a solution will turn a dark red and lose somewhat its strength. We have, as a result of such observation, advised the keeping on hand a stock solution of sodium sulphite, of the strength of one ounce to three of water, and dissolving the metol powder fresh in water, or with such solution each time a batch of plates are to be developed. If the metol is in solution it is more easily handled and a definite amount may be used. Accordingly we tried the addition of a small quantity of sulphurous acid to a metol sulphite solution, and noticed that it had a restraining effect in development, requiring a larger proportion of alkali to set up developing action. The following proportions work well, yielding negatives and slides of good brilliancy:

Water .....	16 ounces.
Metol .....	48 grains.
Sodium sulphite .....	144 grains.
Sulphurous acid .....	$\frac{1}{2}$ ounce.

This gives a colorless stock solution of about three grains of metol to the ounce, which will keep intact for a long time, perhaps six months or more. The carbonate of potash solution is made by dissolving one ounce of carbonate of potash in three ounces of water.

A developer for slides is made by taking one ounce of the metol solution, adding half an ounce of water and one-quarter to half a drachm of the potash solution. Carbonate of soda used in place of the potash will answer as well, and has a tendency to produce brown tones. The metol solution without dilution may be used for the development of negatives. We shall be pleased to hear from others trying this solution as regards its keeping qualities and developing power. As prepared for slides we have developed a dozen with  $1\frac{1}{2}$  ounces of developer, at a cost (estimated) of about a third of a cent each.

*Lantern Slides and Enlargements.*—The winter season now setting in is just the weather for indoor work, and should afford thousands pleasure in the making of lantern slides and enlargements, first for the mutual entertainment of their friends and selves, and, second, because of the advantage such pictures afford as presents or souvenirs. The making of slides, or enlargements, is easily acquired, and can be done with very ordinary tools or apparatus.

A very good practical book on slide making is that by Mr. D. L. Elmendorf, and may be studied with profit and advantage by those desirous of learning how to make slides..

It is not of much use to make slides unless one has a good lantern by which they may be projected on the screen. Lanterns may now be obtained at reasonable prices, having either oil, the ether saturator, electricity, or the lime light with mixed gases as an illuminant. Where electricity is supplied one of the hand feed electric arc lamps will, in many cases, give good satisfaction, as it is very simple and easily controlled. Enlargements and transparencies for the window may be made on ready prepared dry plates at small expense, and add much in the way of souvenirs and decorations to one's room.

*The Latest Flashlight Powder Explosion.*—Our attention has been called by a subscriber to a most distressing flashlight powder explosion which occurred early in October in Denver, Col. According to an account in the *Denver Republican* a photographer by the name of Jack Ross, 29 years old, a native of Hillsburg, Cal., finding business rather unprofitable in Denver, undertook the manufacture on a special order for another photographer there, of three pounds of a magnesium flashlight compound, after a formula said to be his own. He was two days at work on it, and was in the act of putting the powder up in bottles when suddenly a terrific explosion occurred, knocking him down insensible to the floor, setting fire to his clothes, and blowing out a portion of the building. It was with difficulty that the fire on him was extinguished; he was able to say, before relapsing into unconsciousness:

"I was putting flashlight powder in bottles. There were three pounds of it on my bed. It's very dangerous, and when I stooped to handle it there was an explosion. I don't remember anything but the flash."

He was carried to the hospital in an ambulance; the physicians thought his chances of recovery were slim.

Our correspondent, John T. Davidson, M. D., of Denver, writes as follows: "The enclosed clipping containing account of an accident occurring here recently, may serve as a basis for an article upon the danger of flash-light powders containing chlorate potassium. Ross, it seems, was quite a novice in photography, and was mixing a compound containing chlorate of potassium in addition to magnesium powder, with the result stated. It cannot be too strongly impressed upon dabblers in chemistry, that we have in potassic chlorate a salt which is prone to explode upon slight provocation; the danger in keeping flash-light powders on hand which contain this agent is not inconsiderable, and it seems to me that the AMERICAN AMATEUR PHOTOGRAPHER will do a good work in disseminating a little information among those who are not chemically posted."

As is generally known, chlorate of potassium and picric acid are frequently employed in combination with magnesium powder for the purpose of supplying an abundant amount of oxygen to quickly ignite and burn the powder, and when such a compound is ignited, a miniature puff or explosion takes place, but the quantity is so small that it is not generally dangerous. Compounds of this character will not bear sudden jars and will ignite if pounded, particularly when a sliver of wood or other combustible material happens to be mixed in with it.

It is probable something of this kind occurred when he was packing the powder in the bottles.

We caution those who sell and those who use flash-light compounds to handle them sparingly, and as far as possible get along with plain magnesium powder projected through or into an alcohol flame. Just as good a light can be obtained, and the element of danger is greatly diminished. After all it is only the burning magnesium that produces the light. Numerous good devices have been invented for that purpose, and are more to be relied upon than the dangerous compounds. We hope this incident will be the means of making all future users more cautious.

*Our Third Annual Lantern Slide Competition.*—We have been somewhat disappointed in the few entries that have been made in our third annual slide competition, and have decided to extend the time another month, to December 14th, hoping thereby to interest more workers in it. The prize slides now circulating through the country are greatly enjoyed by all who exhibit them, and we feel sure the standard set is one with which no fault can be found.

It is an easy matter for those having fine subjects, and familiar with the necessary manipulations, to make six slides of excellent quality for the competition. We wish to stir up such photographers and urge them to send in their work, because, while they have a chance of getting a medal, they also may be sure of hundreds of others seeing their pictures. We wish to keep constantly before Americans examples of the very best photographic work, and we have assurances from many quarters that our efforts in this direction are appreciated.



## CORRESPONDENCE.

## WHAT ARE PICTORIAL PHOTOGRAPHS?

*Editor AMERICAN AMATEUR PHOTOGRAPHER :*

We have had, from time to time, discussions concerning "artistic" photography, and in the October number of the PHOTOGRAPHER you have given us two prints which, I presume, may be regarded as fair samples of the work of that school which desires to be known, and, to a certain extent, is known, as the "Artistic," the school that aims to make pictures and cares very little, if anything, about making photographs. I say that I presume these prints may be regarded as fair samples of the work of this school, as they bear the name of J. Craig Annan, whom we have been taught to regard as one of the "burning and shining lights" of this school. I refer, of course, to the two cuts labeled respectively "The Flower Stall" and "A Veronese Vineyard." I say "labeled" advisedly, because I doubt if without the labels any one could tell what these cuts were meant to represent. Take "The Flower Stall," what is there in the wooly confusion of the material heaped under the awning to make one think of flowers? Would not the mass of fuzzy light and shade do just as well or better, for the display of a market gardener? Are the light colored objects on the front of the table aristocratic chrysanthemums or plebeian celery tops? Is the general haze that overspreads the whole plate, chemical fog, or bad focusing, or true high art, or mere affectation? Ought a photograph to look enough like what it is meant to represent, so that an average man would know what it is meant for without having to read the title, or is it really more artistic, if it is so vague and undefined, that the average on-looker can *not* guess what it is meant for till after he has read the title? Please tell us why and in what way these pictures are artistic, and why they should not fall under the anathema marantha of "pictorially worthless." Yours,

PHILISTINE.

[NOTE BY THE EDITOR.—It is but fair to Mr. Annan to say that the half-tone reproductions of his most exquisite originals can but give a vague idea of the *character* to be found in his work. Mr. Annan's pictures have been recognized by *artists* as being the *shining lights* of the possibilities of pictorial photography. Millet's work was scoffed at not so long ago by the all-knowers in painting, so Mr. Annan will not take amiss the many meaning smiles to be seen on faces trying to contemplate his work. We hope some day to let our readers see some of Mr. Annan's pictures reproduced by himself in photogravure. Unfortunately, we are not always in a position to give our readers what we would like to.]

## A CORRECTION.

*Editors AMERICAN AMATEUR PHOTOGRAPHER :*

*Gentlemen:* My "Convention Notes" in the October issue of your periodical should have been preceded with the same statement that introduced my report of the convention in a previous issue, namely, that they are based largely on the reports of the Detroit press. Kindly publish this statement and oblige. Yours respectfully,

DETROIT, MICH., Oct. 19, 1895.

DR. HUGO ERICHSEN.

## A CHRONOLOGICAL RECORD OF THE INVENTORS AND DISCOVERERS OF PHOTOGRAPHY.

BY ALFRED J. JARMAN.

(Read before the Society of Amateur Photographers, Oct. 8, 1895.)

Names of persons who have made discoveries in and connected with the art of photography, and the dates of their discoveries.

Invention of the camera obscura—J. B. Porta.....	1554
First record of light impressing image on luna cornea with a double convex lens—Fabricius (alchemist).....	1556
Phosphorescent effects of the solar rays, Licetas—Father Kircher.....	1646
Influence of light upon the crystallization of various salts—Petit.....	1722
Silver and its salts, chloride of—C. W. Scheele.....	1777
Silhouettes on paper by aid of solar rays—Prof. Charles.....	1780

### SILVER.

Nitrate of—Ritter.....	1801
Photographically employed by Josiah Wedgwood, Sir H. Davy and James Watt.....	1802
With organic matter and the salts of lead—J. F. Herschel.....	1839
Iodide of (photographically used)—J. F. Herschel and Ryan.....	1840
With ferrocyanate of potash—Robert Hunt.....	1841
With gallic acid (calotype)—Fox, Talbot.....	1841
With protosulphate of iron (ferrotype)—Hunt.....	1844
(Catalysotype)—Woods.....	1844
Bromide of—Bayard.....	1840
Fluoride—Channing.....	1842
Oxide of—Sir H. Davy.....	1803
Phosphate of—Fyfe.....	1839
Tartrate, urate, oxylate and borate of—Sir J. Herschel.....	1840
Fulminates of—Hunt.....	1842
Benzoates and formiates—Hunt.....	1844
Various vapors upon silver plates, with vapor of sulphur, also phosphorus—Joseph, Nicephore, Niepce.....	1820
With vapor of iodine (daguerrotype)—Daguerre.....	1839
Chlorine and iodine—Claudet.....	1840
With vapor of bromine—Goddard.....	1840
First daguerrotype from life—Draper.....	1839

### GOLD.

Chloride—Rumford, J. J. F. Herschel.....	1840
Plate of with iodine vapor—Goddard.....	1840
Chromate of—Hunt.....	1844
Chrysotype—Sir John Herschel, in June.....	1842

### PLATINUM.

Bichloride of—Herschel.....	1840
Ditto in ether—Herschel.....	1840
Ditto with lime—Herschel.....	1832
Iodide of platinum.....	1840
Bromide of—Hunt.....	1844
Cyanide—Hunt.....	1844

## MERCURY.

Chloride of—Boullay.....	1803
Bichloride of—Vogel.....	1806
Carbonate of—Hunt.....	1844
Chromate of—Hunt.....	1843
Nitrate of—Herschel.....	1840

## THE SALTS OF IRON.

Protosulphate, tartrate, persulphate and ammonia-citrate—Sir John Herschel.....	1845
Cyanic, compounds of—Scheele.....	1786
Desmortiers.....	1801
Ferrocyanates of—Fisher.....	1795
Iodide of—Hunt.....	1844
Oxylate of—Hunt.....	1844
Some of above with mercury—Herschel.....	1843

## COPPER.

Chromate of—Hunt.....	1843
Dissolved in ammonia—Hunt.....	1844
Sulphate, carbonate and iodide of—Hunt.....	1844
Copper plate iodized—Talbot.....	1841

## LEAD.

Oxide, puce colored—H. Davey.....	1802
Acetate of—Hunt.....	1844
Red lead with cyanide of potassium—Hunt.....	1844

## MANGANESE.

Manganese glass, reddened by action of light—Michael Faraday.....	1823
Permanganate of potash—Frommehrs.....	1824
Dioxide and cyanide of potassium—Hunt.....	1844
Chloride of—Hunt.....	1844

## NICKEL.

Nitrate of—Hunt.....	1844
With ferroprussiates—Hunt.....	1844
Iodide of nickel—Hunt.....	1844
Cobalt—Hunt.....	1844
Arsenical sulphuret—Sage.....	1803
Antimony, bismuth, cadmium and rhodium—Robert Hunt.....	1844

## CHROMIUM.

Bichromate of potash—Mongu Ponton.....	1838
With iodide of starch—Becquerel.....	1840
Metallic chromates—Hunt.....	1843
Chlorine and hydrogen—Gay, Lussac and Thenard.....	1809
Chlorine "tithonized"—Draper.....	1842
Chlorine and ether—Cahours.....	1810
Methyle—Cahours.....	1846
Cyanogen, Solution of—Pelouse and Richardson.....	1838
Phosphorus in nitrogen—Beckman.....	1800
Phosphorus and ammonia—Vogel.....	1806
Nitric acid, decomposed by Light—Scheele.....	1786

## RESINOUS BODIES.

Heliography—Niepce.....	1814
Asphaltum—Niepce.....	1814
Resin of oil of lavender—Niepce and Daguerre.....	1830
Guaiacum—Wollaston.....	1803
Bitumens, all decomposed—Daguerre.....	1839
All residua of essential oils—Daguerre.....	1839
Colors of flowers, various kinds upon paper—Herschel.....	1842
Action of light upon yellow wax—Senebier.....	1791
Albumenized paper—Robert Hunt and Niepce de Saint Victor.....	1843-1844

## COLLODION.

Legray.....	1850
The wet-plate process—Scott Archer.....	1851
Pyrogallic acid developer—Scott Archer.....	1851
First dry collodion process—Abbe Despratz.....	1854
Taupenot's collodio-albumen process (dry).....	1855
Fothergill dry plate.....	1856
First patented dry plate—Dr. Hill Norris.....	1858
Collodio-bromo-iodide emulsion first suggested by—Gaudin.....	1853
And used by him.....	1861
Collodio-bromide emulsion discovered by—Sayce, in September.....	1864
First accurate formula—W. B. Bolton.....	1865
Collodio-chloride of silver—G. Wharton Simpson.....	1865
Carbonate soda alkaline developer—H. J. Newton ..	1875

## THE "CARBON" PROCESS.

Mungo Ponton.....	1838
With starch—Bacquerel.....	1840
Gelatine and bichromate of potassium—H. F. Talbot.....	1853
A. Poiteven.....	1855
John Pouncey.....	1857
The Abbe Laborde.....	1858
Fargier.....	1860
Carbon tissue—J. W. Swan.....	1864
Transfer paper—Swan.....	1867
Modified process—M. Carey Lea.....	1869
Invention of the safe edge—Leon Vidal.....	1870
Continued action of light upon exposed tissue—Capt. Abney.....	1870
Intensifying carbon prints with permanganate of potash—Swan.....	1871
Flexible support—J. R. Sawyer.....	1874
Carbon prints on canvas—R. B. Marston.....	1870

## GELATINE DRY PLATES.

Gelatino-chloride of silver—Palmer and Smith.....	1866
Gelatino-bromide—Dr. Maddox.....	1871
First washed gelatine emulsion—King.....	1873
Made commercially by Burgess.....	1873
As dry pellicle—Kennett.....	1874
Various conditions of bromide of silver—Stas.....	1874
Rapid gelatino-bromide process, discovered by Charles Bennett in March.....	1878

With ammonia—Dr. Van Monckhoven.....	1879
Ferrous oxalate as a developer, discovered by M. Carey Lea.....	1878
Double objective lens for portraits—Petzval.....	1841
Ferro-prussiate paper—Sir J. Herschel.....	1842
Salts of uranium—Niepce, de St. Victor and Mr. Burnett.....	1860
Gold toning bath, invented by Fizeau.....	1840
Chloro-platinite of potassium—Döbereiner.....	1856
Platinum toning—M. de Corranza and Burnett.....	1858
	1859
Chloro platinite of sodium—Burnett.....	1859
Platinum printing, Willis' process, with soluble oxydates and free oxydates.....	1874
Hyposulphite of soda discovered as a fixing agent by Sir J. Herschel on the 14th of March.....	1839
The terms negative and positive—Sir J. Herschel.....	1841
Partnership of Niepce and Daguerre, on June 14.....	1829
Photo-zincography, photo-collography, photo-engraving on copper and steel— Henry Fox Talbot.....	1852 and 1858
Woodburytype—Walter B. Woodbury.....	1864
Woodward, inventor of enlarging camera.....	1857
Many researches in photography and upon actinism—Dr. J. W. Draper.....	1840
Improvements in the carbon process—J. R. Johnson.....	1877
Willis' aniline process.....	1864
The tintype—V. M. Griswold.....	1857
Hydrochloric acid, for clearing stain from gelatine plates—Jarman, June.....	1878
Methylated alcohol, for preventing filling of gelatine plates—Jarman.....	1878
Action of light upon gum gamboge—Jarman.....	1878
Use of sodium sulphite in pyro developer—Herbert Berkley.....	1882
Eikonogen developer—Anderson.....	1889

## PLATINUM.

Hot bath process—W. Willis.....	1878
Cold bath process—W. Willis.....	1890
	1892
Sepia platinum prints—W. Willis.....	1883
Researches by Captain Pizzighelli and Baron A. Hubol.....	1888

Do not neglect to see our Holiday Number. It will contain some  
of the finest illustrations ever published.

Persons interested in Lantern Slides should note our Rules for  
the Third Annual Competition on page 524.

## Society News.

**Society of Amateur Photographers of New York.**—*Regular Monthly Meeting Tuesday Evening October 8th.*—The meeting was called to order at 8:15, President C. C. Roumage in the chair. Mr. Wm. M. Murray was appointed Secretary *pro tem*. The principal business of the evening was an informal lecture accompanied by experiments, on "Photography; Its Rise and Progress from the Sixteenth Century to the Present Day," an extremely comprehensive subject, by Mr. Alfred J. Jarman. Hung around on the side walls Mr. Jarman had large poster-like sheets on which the dates of the important steps in the progress of photography were given, together with the names of the discoverers, chronologically arranged. By this means it was very easy to comprehend quickly the progress made in such a long period. We shall hope to give on another page a complete copy of this digest, which Mr. Jarman said he had been twenty years at work on in order to have it complete. It may be well to give here a brief epitome of some of the principal dates. In 1554 was the invention of the camera obscura, J. B. Porta, but it is known that a bi-convex lens was found in the ruins of Ninevah thirty years B. C., so that it is believed the ancients knew something of the action of light in changing the color of substances.

1556. Fabricus discovered the action of light upon luna cornea, (fused chloride of silver.)

1777. C. W. Sheel produced chloride of silver. But Daguerre may be said to be the first discoverer of photography, since he produced a practical process. Neipce also came near it. Fox Talbot, in 1839, was working on different lines; he showed negative pictures on paper in 1844. Later he discovered how to make etched copper plates. The idea of negative and positive pictures was suggested by Sir John Herschel, who also discovered the use of iron salts in the production of pictures, and in 1842 the cyanotype, or blue print, was discovered. The first effort to obtain pictures on glass was to use iodized albumen. Gray, in 1850, discovered collodion. 1851, Scott Archer iodized it. Then came the wet process, which is used to a large extent to-day, in which the salts do not act directly on the film, but a substitution is made; that is, the collodion film containing the iodides and bromides, when immersed in a bath of nitrate of silver, is changed, and bromide and iodide of silver is formed in the body of the film. The method of making collodion was illustrated, as well as the process of preparing a plate and sensitizing it in a nitrate of silver bath. The next step was the introduction of the silver bromide salts in the collodion itself, which was called the collodio-bromide process. Plates coated in this way could be used in a dry state, and had the latitude of standing an over-exposure in the camera of ten or twelve seconds without damage. These plates were well adapted for slide making, and were readily adapted to be toned with platinum or palladium. Mr. Jarman preferred the latter, as it gave more brilliant blacks. Slides were thrown on the screen, showing the tones produced by each salt. The gelatine process of present day supplanted the collodio-bromide, and was invented by Dr. Maddox in 1871. Mr. Jarman had seen the results of Dr. Maddox's first experiment. Speaking of gelatine, he said the carbon process (consisting of sensitizing a gelatine mixture containing carbon or lamp black, with a solution of bichromate of potash) was invented as long ago as 1858.

In 1873 Burgess was the first to introduce prepared gelatine plates commercially, and the next year, 1874, Kennet sold a dried emulsion in pellicular form, which was simply melted into a liquid with hot water and flowed over the plate. All of these preparations were not much more rapid than the ordinary wet plate. But Charles Bennet, in 1875, found by heating the emulsion for a certain length of time at a uniform degree of heat, its rapidity increased to a remarkable extent, which made the new plates far superior to any previous preparations and a commercial success.

In 1876, M. Carey Lea invented the ferrous oxalate developer. He omitted to mention that about the same time Henry J. Newton introduced the sal soda pyro developer for collodio-bromide plates. Mr. Jarman, after reciting the history of the subject, made a practical demonstration of the developing of a carbon print on a single transfer paper. He wetted the printed sheet, and laid it face down, squeegeeing it in contact with another sheet on a piece of glass; it is then put under pressure for ten minutes and immersed in very hot water; soon the first support loosens sufficiently to let the paper be pulled off, leaving the image in black on the second support; continued washing of the water washes out the soft gelatine, and in a few minutes the picture appears complete. The water has a decidedly muddy appearance, yet this does not affect the whites of the picture, which are clear white paper. After development the print is placed in a solution of alum, one ounce of alum to twelve ounces of water, for about ten minutes, which clears the whites of the bichromate of potash. Another washing for half an hour is all that is required to complete the manipulation; then as result a permanent picture is obtained.

He next took up the platinotype process, stating that Willis's cold method, discovered a few years ago, was quite an advance, and made some prints before the audience. He also explained an improved method of making sepia platinotypes without the use of a last bath. He had a special preparation of his own which is added to the oxalate developer, and instead of clearing in muriatic acid he uses oxalic acid. He made some specimen sepia prints with this improved developer, which were very good. He stated that he had been eighteen years in getting together all the data he showed regarding the history of the rise and progress of photography. His plan was quite interesting and instructive. At the conclusion a vote of thanks was accorded him.

Mr. F. C. Beach exhibited sample prints made on a new bromide and chloride paper called "Eclectic Photo Paper," manufactured in Boston, Mass., which, while it is much slower than ordinary bromide paper, produces prints of great clearness and detail, as much so as albumen paper. An exposure of six or ten seconds to diffused day light is sufficient. The developer advised is the ferrous oxalate, to which is added a restraining salt, sold with the paper, and the formula of which is not divulged. The development is rapid, yet perfectly under control. Prints were shown developed with eikonogen and ferrous oxalate. The latter gave tones of a blue-black color. Mr. H. C. Fairchild, after the meeting, demonstrated the paper in the work room. Mr. Charles Beseler exhibited in operation his new lantern and lime light jet, claiming that the latter gave a remarkably brilliant light. The light thrown on the screens was close in intensity to that of the electric light, and was very satisfactory. A few slides were put through the lantern. Mr. Beseler's new jet is obtained by mixing the gases further back from the nozzle of the jet than is usual, and forcing the mixed gases through a peculiarly shaped tube. He uses a black and red rubber tube, black for the hydrogen and red for the oxygen. After this exhibition the meeting adjourned.

*Exhibition of Lantern Slides, Friday Evening, October 25th.*—The slides shown this evening were the set sent to the American Lantern Slide Interchange by the Affiliated Societies of the Royal Photographic Society of Great Britain, London, England, representing the contributions of selected slides of fifteen different clubs or societies.

The exhibition began with slides of the Birmingham Photographic Society, in which were two excellent winter views, one "Sliding," and another "A Warwickshire Lane, Winter." The Hempstead Photographic Club had Views in Spain and Austria; the Lyonsdown Amateur Photographic Association contributes beautiful landscapes, interesting doorway and figure studies. The Exeter Amateur Photographic Society has fine illustrations of the Exeter Cathedral. The Cromwell Photographic Club sends beautifully executed interiors, particularly of the entrance hall and staircase at Blickling Hall, Norfolk. The Southport Social Photographic Club is not particularly strong, but had an instantaneous view of merit, of surf at Hawkeshead, near Bowness. In the two pictures contributed by the Brechin Photographic Association was a carbon slide of a statue of Hamlet, rather curious, but not extra good.

The Putney Photographic Society has in its collection views in New Zealand of Cape Town, South Africa, from the ocean, showing the "Lion Rock" and the ruins of three abbeys. The work was very good.

The South Sea Amateur Photographic Society contributes one picture of Brindon Valley, North Devon, of average merit. The Rotherham Photographic Society has excellent views of the famous Haddon Hall, pretty marine views, and a very novel and interesting picture of "Frost on the Window Pane." We never saw a better rendering of the subject than is shown in this picture. In the slides sent by the Croyden Camera Club are two slides showing interiors in St. Peter's at Rome, which are regarded as the finest in the whole collection. The negatives were made by Mr. J. T. Sandell, on the Sandell triple coated plate intended to avoid all semblance of halation. There is absolutely none, while the reflections from the glossy surface of the marble floor and columns are very perfect in their varying degrees of intensity.

The Sheffield Photographic Society contributes fine examples of hoar frost and good views of Wingfield Manor. The London and Provincial Photographic Association sends some pretty pictures of English cottages and sheep, and an attractive view along the bank of the Thames, taken in February, 1895.

The Hackney Photographic Society is the only one that sends pictures of animals, and they are very good—a chimpanzee and a zebra. A flower study, by J. Carpenter, of this club, called "Narcissus," is finely rendered, and is the only one in the set.

The collection ends with views of Oxford, of the Divinity School, Christ Church College and street views, by the Oxford Camera Club. Next to the slides usually sent by the London Lantern Society it is perhaps the best arranged in point of variety and interest of any that have been received from England. It shows the affiliated society plan is a success so far as slides are concerned, and the thanks of the Interchange are extended to all the contributors and to Mr. R. Child Bayley, of the Royal Society, for pushing the matter along. The slides were very well received, and greatly enjoyed by an appreciative audience, in spite of some drawbacks in the operation of the lantern.

Mr. F. C. Beach presided at the screen and Mr. F. M. Hale at the lantern.



**Orange Camera Club.**—The following report is received from W. H. Cheney, President of the Club:

Prints and slides submitted in Members' Competition were judged on Monday, November 4th, by a Committee of Award, consisting of C. Y. Turner, a well-known New York artist, and Charles Leroy, of the Newark Camera Club.

Awards were made as follows:

PRINTS, LANDSCAPES.

First Silver Medal to Edward H. Graves—"Lake Windermere."  
Second Bronze Medal to T. A. & C. G. Hine—"Woodland Road."  
Honorary, D. S. Plumb—"Near Little Falls, N. Y."

PRINTS, FIGURE STUDIES.

First Silver Medal to W. H. Cheney—"Fagot Gatherer."  
Second Bronze Medal to T. A. & C. G. Hine—"At Her Ease."  
Honorary, Hermann Joerns—"Bad News."

PRINTS, SNAP SHOTS.

First Silver Medal to W. H. Cheney—"A Line of Mutton."  
Second Bronze Medal to W. D. Grumbie—"Please, Master, Find Me a Cat."

LANTERN SLIDES, LANDSCAPES.

First Silver Medal to Edward H. Graves—"Cooling Off."  
Second Bronze Medal to T. A. & C. G. Hine—"On the Road to Grassmere."  
Honorary, William Lord—"Moores Bridge, Catskills."

LANTERN SLIDES, FIGURE STUDIES.

First Silver Medal to T. A. & C. G. Hine—"On the Beach at Scheveningen."  
Second Bronze Medal to Edward H. Graves—"A Descendant of Anne Hathaway."  
Honorary, John McGowan—"Nature Unadorned."

The regular fall exhibition of lantern slides was given by the Club, in Music Hall, Orange, on November 14th, at which time the prize winning prints and slides were shown.

**Syracuse Camera Club.**—This club, we are advised, is in quite a prosperous condition. For the coming winter there are to be lectures on "Photography with the Microscope," "Chemistry of Photography," a talk on lenses by Mr. Edward Bausch, of the Bausch & Lomb Optical Company, a lantern lecture on India, by Mr. C. R. Pancoast, and an exhibition of photographs by the most famous photographers of the day, all in addition to the several lantern-slide exhibitions provided by the American Lantern-Slide Interchange. The club has an associate membership to which ladies are admitted, and an effort is being made to increase this desirable class of membership.

On Friday, October 18th, the slides of the Photographic Society of Japan were shown to a large audience. The officers of the club are: Will H. Olmsted, President; Herbert F. Smith, Secretary; John D. Pennock, Treasurer.

**Postal Photographic Club.**—The Secretary reports Oct. 11th, as follows: The November album was issued Oct. 15, 1895; it contained seventy-six prints, contributed by thirty-three members and two friendly contributors. Prints are needed *at once*, for the album to be sent to England. They propose sending theirs by Nov. 1st, and we do not want to delay ours beyond that time. But to do it prints should be sent to me immediately. I hope that *not one* member will be unrepresented. Will not some one volunteer to assume the duties of Secretary for the coming year?

There are at present four vacancies in our membership list. Have you not some friend who would like to become a member? Will not every member contribute to the December album? Make an extra effort if necessary, and if your quota of prints is exhausted please send in necessary prints with as little delay as possible. F. E. FAIRBANKS, *Secretary*, Fitchburg, Mass.

**New England Lantern Slide Exchange.**—On September 21, 1895, a meeting of four representatives of four clubs met at Springfield, Mass., and adopted a new set of rules to govern the Interchange for this season, also elected Will C. Eddy, 3 Gove street, Medford, Mass., as the Secretary and General Manager. The exchange is limited to sixteen photographic societies, and an Executive Committee decides on applications for membership. Fifty slides from negatives by members of clubs are furnished each, each club deciding upon their selection, which is different from the regular American Lantern Slide Interchange. The provision as to size of plates, labelling and mat opening is the same as the regular standard.

According to Rule 6, if any club neglects to comply with the rules as to marking slides, and fails to correct errors after due notice to its Secretary, it will be considered as forfeiting its membership and having its set of slides withdrawn. Rule 7 provides for the beginning of the circulation of slides on December 1st each year, and the remaining rules relate to the exhibition, withdrawal of slides, express charges, breakage and damage of slides and selections. Each club is to select the five best slides when a set is shown and report their numbers to the central Secretary. The fees paid this year are \$3.

On the date above mentioned, the delegates, four in number, enjoyed a ride in the morning by electric cars along the Connecticut River, dining in Springfield on their return. In the afternoon a ride was taken through Forrest Park and pictures secured. The palatial residence of Mr. Wesson was visited through the courtesy of Mr. C. G. Thompkins. The business meeting was held in the rooms of the Springfield Camera Club. There were represented the Springfield Camera Club, by W. M. Lester; Worcester Camera Club, by A. M. Powell; Pittsfield Camera Club, by C. G. Thompkins, and the Mystic Camera Club, by Will C. Eddy.

It was voted to accept the applications for membership of the Maplewood Camera Club, Maplewood, Mass.; also the Worcester Lantern Slide Club, of Worcester, Mass.

The Secretary reported the utter disregard experienced on the part of some of the clubs of the rules and urged a change in the latter, whereby slides not properly arranged would be returned. It is the intention to invite clubs in New York State to enter the exchange. The annual meeting for 1896 was fixed to be at Pittsfield, Mass. The Springfield club was heartily thanked for its hospitality.

At present ten clubs belong to the Exchange, as follows: Mystic, Medford, Mass.; Springfield, Mass.; Pittsfield, Mass.; Worcester Lantern Slide Club, Mass.; Pawtucket, R. I.; Waterbury and New Haven, Conn.; Rutland, Vt.; Syracuse, N. Y. and Maplewood, Mass.

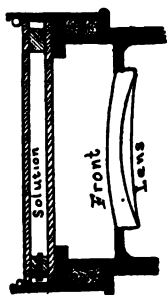
**Buffalo Camera Club.**—The annual meeting of the Club was held Tuesday, Oct. 8th; the following trustees and officers were elected for the ensuing year, viz.: Directors: Wm. J. Haskell, John A. Stein, John P. Zenner, Warren G. Sherk, Conrad L. Baer, H. H. Boyce, O. H. Hauenstein, Dr. B. Bartow and E. O. Hawks. Officers: President, Wm. J. Haskell; Vice-President, John A. Stein; Secretary and Treasurer, J. P. Zenner; Interchange Director, H. H. Boyce.

### "THE RAY FILTER FOR CLOUD AND LANDSCAPE PHOTOGRAPHY."

Autumn with its almost magical change in the coloring of forest and field, the exchange of uniform green for the gamut of reds, yellows and browns, lending just the contrast to the landscape that the summer has made us long for, brings to the photographer more strongly than ever, the desire to reproduce in their natural colors these impressive pictures.

How many of us have, after wasting numberless plates and much valuable time, given up the attempt to make anything satisfactory out of all this wealth of opportunity! True, colors are out of the question, but an ordinary photograph, in which the colors are rendered of their correct relative value, and the contrast presented in the autumn landscape retained perfectly, can be made with no more trouble, and with but a trifle more expense, than the ordinary "disappointments."

It need only be remembered that the ordinary dry plate or film is but very slightly sensitive to the reds and yellows of autumn foliage, rendering both of an almost uniform "blackness," to give the key to the situation. What is needed then is an orthochromatic plate, and a suitable ray filter to help the plates do their work. Among the various forms of filters recently offered by various makers, the bichromate of potash cell, in particular, lends itself to landscape work the best. The cells, as now made, consist of two plates of optical glass, perfectly polished, between which is cemented a glass ring three millimeters thick, the inner surface of the ring being ground, to prevent reflections, and two holes being drilled about a centimeter apart, through which the cell is filled or cleaned. The cell is mounted in a nicked mounting lined with cork, and slips on the hood of the lens as a cap would. With your lens equipped with this interesting apparatus, and your plate holders filled with any reliable rapid orthochromatic plates, you can seek out the favorite spots, with the assurance that your negatives will show not only the beauty of the varied lights and shades, but also any clouds that may be present.



BICHROMATE OF  
POTASH RAY FIL-  
TER ATTACHED TO  
LENS.

The bichromate solution in the cell strains out the blue and violet and the most actinic green rays, and thus reduces the exposure of the blue sky and clouds to a harmonious level with the foliage, at the same time not increasing the exposure required beyond "snap shot" limits, exposures of 1-50 second with an aperture of 1:16 developing with full time effect. The added beauty of picture made with the ray filter, due to the perspective produced by the clouds, as well as to the presence of the clouds themselves, amply repays the extra expense of the apparatus, which is, after all, very slight.

The construction is indicated in the accompanying figure, which is a sectional view of the cell as attached to the lens hood.

The Bausch & Lomb Optical Co., of Rochester, have recently put on the market a bichromate of potash cell as described above.

**"Photogram" Prizes.**—The proprietors of the *Photogram*, 6 Farrington avenue, London England, offer a series of prizes, amounting in all to £250, or nearly \$1,000, for articles on different subjects, and for landscape pictures in Ireland, Scotland and England. For details, address as above mentioned.

### PHOTOGRAPHY AT THE COTTON STATES EXPOSITION.

In the *Scientific American* of recent date appeared quite a drastic editorial on the short sightedness of the management of this Exposition in putting every possible obstacle in the way of representatives of well-known and popular journals, desirous of obtaining accurate photographs for illustrations and thereby assisting in promoting the Exposition. There is no doubt but what it has kept away many visitors who would have attended had the assistance thus offered been cordially welcomed and catered to.

The spectacle of journals having to fight for the small privilege of securing illustrations, is one of the most remarkable features developed in the recent management of expositions. How many more expositions will be required to bring about a change no one can say.

At any rate it appears the Department of Concessions has greater weight than the Department of Promotion; the latter is desirous to advertise by pictures the Exposition as far as possible, and at as small expense as possible; the former wishes to grasp at every penny that can be squeezed out of any possible concession, regardless of the probable attendance and its hurtful influence on the promotion of the Exposition.

But in the Atlanta Exposition it was the tempting offer of Mr. C. D. Arnold, of Chicago notoriety, to pay \$4,000 for the exclusive right to photograph at the Fair that got the better of the Board of Directors, and made them overlook two or three multiples of that amount, which might be realized should the right be given to all desirous of making pictures. The Department of Promotion was greatly crippled by this action, as it was at Chicago, and complained bitterly, but the Board paid no heed to its complaints, preferring the few pennies it had bargained for to the public benefit of a more liberal policy. As a consequence Mr. Arnold holds the field against all comers, and has issued orders that no camera of any sort shall be admitted to the grounds. We are informed that the attendance at the Exposition is not what was expected. How can it be, if the thousand newspapers who would gladly help, are debarred illustrations that would excite interest and attention. Any body but the Department of Concessions can understand that.

It is singular that business men, who appreciate the value of indirect advertising in their own business, should lose all understanding in that regard when they are on an exposition board. Then they grasp at certainties, and overlook the possible probabilities and financial success of more liberal public-spirited action.

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### PLANS FOR DARK ROOMS.

Messrs. Pancoast & Hand, a new firm at 1213 Filbert street, Philadelphia, Pa., who have begun the business of teaching and assisting amateurs in practical dry plate work and lantern slide making, inform us they are now prepared to equip dark rooms and furnish plans for their construction on the latest and best models as regards convenience and ventilation. They will gladly communicate with any one desiring reliable information regarding dark room construction.

When in Philadelphia a short ago we had the pleasure of inspecting their dark room, which is a model in neatness and convenience. The light used consists of an

electric incandescent lamp, inclosed in a zinc box eight inches square, with a small window four inches square in the front, and a glass bottom in which is a sheet of ruby post office paper. By this construction a very soft, non-actinic bright light, perfectly non-actinic, is thrown downward on the tray; at the same time the eyes are kept in darkness. The small window in front is protected by a metal slide; when it is desired to view a negative by transmitted light to determine its density, the slide is drawn to one side and the light from the small window passing through a section of the negative, permits its density to be readily judged.

The dark room is provided with narrow shelves, only from three to four inches wide, just wide enough for one row of bottles, and a very large iron sink about six feet long, over the top of which is a heavy, galvanized wire cloth grating, making a perfect support for trays, graduates, etc., permitting also good drainage.

The hypo-fixing baths are located at one end of the main sink. A special shelf is provided for graduates with niches in, that they may drain downward in an inverted position. At one end of the room is a spacious shelf for filling plate holders, and in the rear is a large, orange-colored glass window shielded by a curtain, facing toward the surrounding room, which gives ample light for slide making. Under the plate-holder shelf spoken of, is built a special rack for holding trays in a vertical position. The chemicals for developing and fixing are of the purest, distilled water is used, and even the hypo is filtered.

Mr. Ashton Hand showed us a very simple magazine plate holder attachment or substitute for the Eastman film mechanism in a No. 4, 4 x 5 Kodak, for using  $3\frac{1}{4} \times 4\frac{1}{4}$  plates.

It is made telescopic, to fit into the camera exactly the same as the film carrier, and the same screw which holds the latter, secures the plate holder attachment. One side of the box is hinged to open for inserting and drawing out the plate holders, four of which are very easily stored in the space occupied by the film rolls. The back has a circular hole, permitting one to view the picture on the ground glass when focusing, if desired.

It is a unique adaptation for taking pictures on plates, and a practical way of utilizing the instrument at times when sensitized film cannot be had for love or money, as Mr. H. expressed it.

We were also informed that in making lantern slides care is taken to correct the distortion of buildings seen in negatives, which is something the common run of lantern slide makers seldom or never do.

This firm also make a specialty of platinum printing, and have been very successful in that line. They deserve the patronage of all amateurs and others wishing to have reliable work done.

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### Editorial Table.

**Quick Photography with Bromide Papers.**—The Nepera Chemical Company, Nepera Park, N. Y., relate the following incident that has come to their notice: Some time ago a manufacturer had to have a photograph of his building the same day; this factory was situated in the country, and he was unable to find a professional photographer who could come up for doing the job; he consequently addressed himself to one of his friends who is an amateur photographer, and unfortunately this friend had no films nor dry plates. All that was left for him was some bromide

paper and Velox paper. He put the bromide paper in his plate holder instead of a dry plate, made his exposure, developed right away, fixed, washed two or three minutes in order to remove the excess of hypo, took this wet negative, squeegeed it in contact with a piece of Velox paper, which had been immersed in water before in order to prevent it sticking to the paper negative, then exposed for about fifty seconds to diffused light, and was able in this way to have half a dozen pictures of the factory entirely finished within three-quarters of an hour after the paper negative was developed. The fact that the paper negative was wet rendered it more transparent, and in this way no detail was lost.

**Hypo and Albumen Papers.**—Mr. G. Gennert, 24 and 26 East Thirteenth street, reports increased demand of late for the celebrated Walpole new process chemicals, for which he is agent.

Photographers are rapidly becoming convinced that the fine crystalline form in which these chemicals come into the market is a great advantage, as is also the fact that they are stronger, cleaner and dissolve instantly in cold water, which is not the case with others.

Walpole new process hypo should be used by every photographer in the country, as it is clean, pure and strong, costing no more than ordinary hypo when the quality is considered.

He also reports an increased demand for albumen paper during the past month, especially the new "Eagle Satin," which seems to take exceptionally well. This is a new paper and should be given a trial. It is coagulated on a bath of alcohol and gives much richer results than ordinary paper.

**New York Branch of Cramer Dry Plates.**—We are informed that the well-known Cramer Company have established a New York depot at 65 Greene street, New York, under the management of William C. Paul, which will be the eastern distributing point for their goods. They supply six different brands of plates, all of superior quality.

**Philadelphia Commercial Museum.**—We have received a symposium of this institution, which is of a municipal character, designed to have exhibits of products of various kinds and a bureau of information for the benefit of manufacturers. William Pepper, LL. D., is President.

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## SECOND EXHIBITION OF ARTISTIC PHOTOGRAPHY

FROM JANUARY 15 TO FEBRUARY 15, 1896, TO BE HELD AT BRUSSELS BY THE ASSOCIATION BELGE DE PHOTOGRAPHIE.

**Regulations.**—A jury composed of eight members, selected amongst the artistic and photographic notabilities of Belgium, shall carefully examine the pictures, and select those worthy to be exhibited. Only the works of pictorial merit shall be admitted, although all kinds shall have the jury's consideration for selection. The number of pictures for each exhibitor is limited to ten. Each picture, of no matter which size, must be framed separately, and must bear on the back the title and name of the exhibitor. The space is allotted free of charge, but the exhibits must be delivered carriage paid, and the return is also to exhibitor's charge. No awards are offered, but each exhibitor shall receive a commemorative medal.

Applications for space should be directed before December 1, 1895, to the Secretary of the Association, 97 Avenue Brugmann, Uccle lez-Bruxelles.

The Association Belge de Photographie shall take all possible care for the safety and good preservation of the pictures, but decline responsibility in case of *vis major*. Those of the exhibitors who are disposed to sell their works, are requested to name the price to the Secretary. A commission of 10 per cent. will be charged on sales effected. The pictures accepted by the jury, as well as those non-accepted, shall be re-forwarded immediately after the Exhibition is closed. A further advice shall be sent to exhibitors, giving the names of members of the jury, the salon where the Exhibition will be held, the forwarding form and the precise date when the packages must be sent. Exhibitors are entitled to a season ticket, which shall be strictly personal.

During the time of the Exhibition, lantern shows shall be given, of diapositive slides, selected by a special jury. The lantern slides must be of the Congress size, namely, 8½ cen. x 10 cen., and bear a white disc on the the inferior right angle, the slide being held as same should be projected. Same must bear the subject and the exhibitor's name, but one sending must not exceed twenty-five in number.

The President of the Association Belge de Photographie, JOSEPH CASIER; Secretary, M. VANDERKINDERE.

Form of entry, to be sent before December 1, 1895: M. the Gen. Secretary of the Association Belge de Photographie, 97 Avenue Brugmann, Uccle lez-Bruxelles:

SIR: I, undersigned, John Jones, 5 Chambers street, New York, N Y., U. S. A., desire exhibiting at the Exhibition of Artistic Photography to be held at Brussels from January 15, 1896. I agree to abide by the regulations of this Exhibition.

New York, the 15th day of November, JOHN JONES.

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### OBITUARY.

In recording the death of Thomas C. Roche, October 22, 1895, at the age of sixty-eight years, we shall miss from the ranks of the veteran photographers a worker who had made a reputation that few ever attain. We knew Mr. Roche for many years, when he was the right bower, so to speak, of Mr. Henry T. Anthony, in all the experimental work of that indefatigable photographer and manufacturer, who was determined to give the photographic fraternity the very best that could be produced. Mr. Roche was very approachable and good hearted, willing to explain processes to amateurs and beginners. He was the photographic expert of Anthony & Co. for thirty-three years, and worked faithfully for their interests and the interests of photography in general. It is recorded of him that he suggested and introduced the idea of coloring albumen papers with aniline colors or dyes. Beginning his career as an amateur in 1858, about the time the wet plate process was perfected, he was later induced to take up photography as a professional and was engaged by Mr. H. T. Anthony. Then stereoscopic work was the rage, and he made thousands of negatives of New York City and on the battlefields of the Civil War for the firm. He also perfected himself in the working of the carbon process, and in 1877 and the following year was awarded silver medals for the best carbon transparencies. In the same year he invented an improvement in collotype printing, which is now commercially used. Stimulated by reports that came from England in 1878 of the remark-

able rapidity of the new gelatine dry plates, he set to work to produce a rapid printing paper, and in 1879, it is said, exhibited to his firm proofs made on gelatino-bromide paper, which he patented in 1881. Then, at the time Mr. Eastman was embarking in the business of manufacturing dry plates, the Anthonys being his selling agents, Mr. Roche invented a process of hardening the gelatine film during its manufacture, preventing frilling in hot weather, and enabling one to develop plates in warm water. Mr. Eastman made plates after this process and sold them under the brand of "Tropical Dry Plates." Mr. Roche was very fond of experimenting and testing new formulas. He was very active in the Operators Photographic Association in 1883, and aided the amateurs some in forming the Society of Amateur Photographers of this city. His last appearance before that society, some three years ago, was in a demonstration he gave of the primuline process. He has left a family of two or three children, and, as was naturally to be expected, one son, taught by his father, has become an expert in half-tone and line work, having a permanent position in the newspaper office of the New York *Herald* as the chief of its photographic department.

Mr. Roche was a rapid talker and a quick operator, very enthusiastic on the subject of photography, and very kind and helpful in disposition. He will be missed by hundreds of friends, who have profited by his practical and valuable advice. The funeral services were held at his home in Brooklyn on Thursday, October 24th, the twenty-three employes of Anthony & Co., his old associates, attending in a body, and the firm being represented by Col. V. M. Wilcox and Mr. Richard A. Anthony.

The honorary pallbearers were : A. Bogardus, Geo. G. Rockford, E. Bierstadt, D. Anderson, G. P. Hall and C. F. Coonley.

**DEATH OF J. THAILL TAYLOR**—It is with feelings of great sadness and regret that we learn, as we are about to go to press, of the unexpected death of this veteran photographic editor, whose pen has been the most prolific of any writer in the literature of photography, and who has been connected with the *British Journal of Photography* for the past thirty-four years. He was known all over the world, and had but recently come to the United States after an absence of nearly ten years, to spend a season of rest at his Florida homestead, and died there rather suddenly on November 8th or 9th. Many friends all over the world will mourn his loss.

#### BOOK RECEIVED.

THE "AMERICAN ANNUAL OF PHOTOGRAPHY AND PHOTOGRAPHIC TIMES ALMANAC" for 1896. Edited by Walter E. Woodbury. Published by Scoville & Adams Company, N. Y. Price seventy-five cents.

The *American Annual of Photography and Photographic Times Almanac* for 1896 is certainly a wonderful seventy-five cents' worth. Last year it was thought that the *Annual* had reached its height, but Mr. Woodbury has once more shown us that his name is a guarantee for progress. The book is so full of good matter that it is too late to review it in this number. We shall have more to say about it in the next. For the present, let us advise our readers to get a copy at once.

**The Bridgeport Library Photographic Exhibition.**—Want of space prevents us from giving an extended notice in this issue of this very successful and interesting exhibition, which closed on November 2d



### THIRD ANNUAL "AMERICAN AMATEUR PHOTOGRAPHER" LANTERN SLIDE COMPETITION.

For the best set of six lantern slides we offer one silver and one bronze medal in each of the following classes:

- |                     |                      |
|---------------------|----------------------|
| I. Landscapes.      | II. Marine pictures. |
| III. Genre studies. | IV. Architecture.    |

#### Rules.

RULE 1.—Entries may be made in any or all of the different classes, and must consist of six slides for each set entered, sent prepaid.

RULE 2.—Both the original negatives and the slides must be the entire work of the competitor.

RULE 3.—No competitor will receive more than one prize in any single class.

RULE 4.—The size of the slides should be  $3\frac{1}{4} \times 4$ , or  $3\frac{1}{4} \times 3\frac{1}{4}$ . When viewing the picture in its natural position the label containing the title must be to the right, and the thumb label on the lower left hand corner.

RULE 5.—Sets receiving the awards will become the property of the AMERICAN AMATEUR PHOTOGRAPHER, and will be loaned to the principal photographic societies. The remainder will be returned at the expense of the competitors, *if so desired in writing.*

Entries close December 14, 1895.

Competitors will send their slides to Alfred Stieglitz, 162 Leonard street, New York.

**Mr. Sydney Keith.**—We have alluded, in a previous number, to Mr. Keith as a Scottish amateur photographer taking a trip around the world with a stereoscopic outfit. We had the pleasure of a call from him on the 8th inst., on his return home, and found him much improved in health. He has visited the Yellowstone region, California, Alaska and Japan, enthusing Mr. W. K. Burton, of the Imperial University there, in the beauties of stereoscopic work. It seems nothing of that kind is taught in Japan, but now Mr. Burton is to further it. He gave Mr. Keith the following formula for a developer called the Crystolos, which was originated in France and has been kept secret. It is a powerful developer, and when used in its normal strength the tray holding the plate should be covered up, and the plate only looked at occasionally. It is as follows:

#### NO. 1.

Hydro-quinone.....	1 oz.
Yellow prussiate potash.....	3 oz.
Sodium sulphite.....	5 oz.
Water.....	30 oz.

#### NO. 2.

Hydrate of soda solution (1 oz. of soda dissolved in 10 oz. of water) or a 10 per cent. solution.

#### NO. 3.

Ten per cent. bromide of potassium solution (1 oz. dissolved in 10 oz. of water).

The normal developer is made by adding to 10 oz. of water  $\frac{1}{2}$  oz. of Nos. 1 and 2 and 1 oz. of No. 3.

Mr. Keith left Japan on October 18th, came right across the continent and started for Liverpool from New York on November 9th on the fast steamer *Lucania*, and will have reached home in less than a month. He thinks the trip to Alaska is an interesting one, especially to Americans. He estimates that he has exposed 300 plates, and traveled 27,000 miles in about five months. He regards Japan as a very interesting country. We wish him success in the ultimate development of his numerous exposed plates.

"*Index Rerum Photographic*," by Dr. John H. Janeway, U. S. A., continued from page 480. Vol. VII.

is set in vibration and a photograph is made of it on a traveling band of paper. If the image of this photographic tracing is projected by means of an electrical arc or oxy-hydrogen light upon a silenium receiver, the original speech is then heard.

**PHOTOMETER**—An instrument for measuring the relative intensities of light.

The information obtained by them in calculating the exposure needed can only be approximate, as they solely measure the visual and not the chemical rays. Still, that approximation is oftentimes very valuable in aiding one to judge of the different gradations of illumination. There are quite a number of these instruments in the market. Probably the best are Decoudin's, about the size of a watch, and consisting of a series of holes arranged in a circle and covered with varying thicknesses of a transparent material. It is applied to the ground glass of the camera, over some part of the picture showing half tones, and the instrument is rotated until the light passing through the holes, of which only one at a time is exposed, is no longer visible. The thickness of the transparent material is read off. There is a letter corresponding to each thickness, and all that remains is to refer to the table on which the exposure required for that letter is stated. A table gives the range of exposure from one-half second to six minutes. The next is one devised by Dr. H. W. Vogel, and consists of a box with partitions. The cover of these partitions contains a series of graduated openings. A good description of it here cannot be given without drawings. See Vogel's "Progress of Photography."

**PHOTO SALTS**—During the year 1887 Mr. Carey Lea, of Philadelphia, published in the *American Journal of Science*, the results of a long series of researches upon the nature of the change affected by light upon the haloid salts of silver. Previously he had been the principal advocate of the theory that the first effect produced by light is simply a physical change, predisposing the elements of the silver haloid to dissociation, so that when the reducing agent (developer) is applied, the molecules so affected yield more quickly to its influence. The chemical theory declared that the effect of light was to remove some of the haloid element. The chlorine, bromine combined with the silver, forming a sub-salt, which was readily reduced by the developer.  $2 \text{AgCl}$ , silver chloride  $= \text{Ag}_2\text{Cl}_2$  yields silver and chlorine and subchlorides. Mr. Lea's later researches led him to believe in a modification of this chemical theory. He finds that light decomposes a small part of the silver salt, and "that the sub-salt then forms a molecular combination with the unaltered salt." To such a molecular combination he applies the name of photo-salt, and

speaks of "photo-chloride of silver" or "photo-bromide of silver," as the case may be. The proportion of the "sub-salt" in the combination may vary from a very minute quantity up to eight or nine per cent. These photo-salts exhibit a wide range of coloration, from white through pink and purple to black. The typical photo-chloride of silver is of a magnificent red hue. Mr. Lea has been unable to prepare these photo-salts chemically without the action of light. The subject is a very interesting one, and should be carefully and exhaustively investigated, for it may be that through these salts, lies the way to photography in colors.

**PHOTO-TINT PROCESS**—Perfected by B. I. Edwards. It's more simple than the heliotype, more rapid, and gives finer and more delicate results.

**PHOTOTYPE**—The type or plate and the process by which the plate is prepared and printed from.—A gelatin film is used. See Photo Mechanical Printing Process.

**PHOTOXYLIN**—A substance used in Russia in place of gun cotton. Geo. W. Benniger publishes the method employed by him in its preparation. After carefully drying wood pulp it is nitrated in the following solution: Nitrous acid, 43° Baume, 3½ lbs. avoird.; sulphuric acid, 4½ lbs. avoird. Potassium nitrate, granular, 8 oz. avoird. The acids having been cooled to 90° F. the potassium nitrate is added and thoroughly incorporated. Four ozs. of well dried pulp is placed in the mixture and allowed to remain twelve hours. It is then removed and thoroughly washed. The addition of a few drops of ammonia to the wash water facilitates the removal of the acids. Nitro cellulose thus prepared leaves little or no residuum on burning, and is entirely soluble in a mixture of 50 per cent. concentrated ether and 50 per cent. of alcohol. Three per cent. of this photoxyline is sufficient to make a very thick collodion, and leaves a very tough film when applied. An addition of 5 drops of castor oil to the fluid renders it flexible. This solution, also called photoxyline, has the advantage over ordinary collodion in giving a strong film.

**PHOTO-ZINCOGRAPHY**—A photo-mechanical process for reproducing drawings of all kinds, etc., in which a plate of zinc specially prepared is used.

**PINHOLE CAMERA AND PHOTOGRAPHY**—A pinhole is sometime substituted for a lens, either for necessity or choice. The resulting negative is, of course, not as sharp—though this has been questioned—and a silver print from it would not look quite as well as if taken with a lens, but for bromides, where the detail required is not so great as for silver prints, very satisfactory results may be obtained. Prof. Pickering, of Harvard Observa-

*To be continued.*

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THE  
AMERICAN AMATEUR PHOTOGRAPHER

VOL. VII

DECEMBER, 1896

Modern Photographic Processes of Venice

BY M.

THE most beautiful method of reproduction by photographic means is the photographic process, an example of which will be found in the frontispiece to this issue. Artists are fond of this method for the reproduction of their works, as it not only brings out the various effects of light and shade, but preserves as well as the true artistic touch of the artist. The process of reproducing photographs is highly artistic and generally employed may be described as follows: From the negative transparency is made; this is done by simply exposing a slow dry plate behind the negative and developing it. Now from the positive we make a print by the carbon

VENEZIA.

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# THE AMERICAN AMATEUR PHOTOGRAPHER,

VOL. VII.

DECEMBER, 1895.

No. 12.

## Modern Photographic Processes of Illustration.

BY MAX MADDER.

The year 1895 will undeniably mark an epoch in the history of photographic process work. One has only to compare the magazines of to-day with those published but a few years ago to note the remarkable change that has taken place in the process employed in illustrating. The methods at present adopted may not be thoroughly understood by the readers of this magazine, and I will therefore endeavor to give a description of the more important ones.

The most beautiful method of reproduction by photographic means is the photogravure process, an example of which will be found in the frontis-

"VENEZIA "

BY A. S.

piece to this issue. Artists are very fond of this method for the reproduction of their works, as it not only brings out the various effects of light and shade, but preserves as well the distinctive touch of the artist. It is also a fine method of reproducing photographs, the image being highly artistic. Generally employed may be the following: From the negative, a transparency is made; this is done by simply exposing a slow dry plate behind the negative and developing it. Now from the positive we make a print by the carbon

process, and the image will, of course, be a negative one. This is transferred to a copper plate (to which a fine grain has been given by dusting over with fine bitumen powder and heating sufficiently to cause the fine particles to adhere) and when the latter is placed in an etching bath of perchloride of iron the copper is eaten away by this substance wherever it is not preserved by the carbon negative image on the surface of the plate. The carbon image is then removed and the plate cleaned. If the plate be rolled with an ink roller, and the surface wiped over carefully, the ink will only remain on the parts eaten away by the acid. A piece of paper is then placed over the plate and pressed very tightly upon it. When it is removed the ink will be found to have come out of the plate and adhered to the paper. This is what is termed an intaglio process, because the image is engraved in the plate. In nearly all the other processes the image stands out in relief on the printing plate.

In the printing of photogravures great care is required. No successful method of printing by machinery has as yet been devised. A skillful printer can only pull off about 500 impressions as a day's work; hence the process, compared with others, is a very expensive one, and cannot be used for all kinds of work.

The Woodburytype process is another intaglio process. In this a glass plate is coated with collodion and then with gelatine containing bichromate of potash. The bichromate has the peculiar effect of rendering the gelatine insoluble wherever it is exposed to the light, so when this plate is exposed beneath a negative and washed in warm water the result is an image in relief. When the gelatine relief is dry it is exceedingly hard, so hard, in fact that when stripped from the glass it can be pressed by hydraulic pressure into a sheet of lead. By this means an intaglio mould is formed. This is placed in a specially constructed press, having a heavy and perfectly true lid. A little warm gelatine solution containing any desired pigment is poured on to the intaglio mould, a piece of paper laid on the top and the heavy lid brought down and firmly clamped. The pressure of the lid squeezes out the excess of pigmented gelatine, and only allows that to remain which lies in the depressions of the mould. This sets and adheres to the paper, so that when the latter is removed from the press it has attached to it a gelatine image, which is dried and hardened with chrome alum.

The Woodburytype process is largely worked in many European countries, but has never, for some reason, been a success in America.

Another process of photo-mechanical reproduction is that known as the Albertype process. It is also worked under a variety of other names, but the term Albertype, given it by the inventor, J. Albert, is the correct one.

it of thick glass, ground per-  
e, is first coated with a film  
en and gelatine, to which a  
te has been added. This is  
on a piece of black cloth and  
exposed to light, washed  
and dried. The plate is  
again coated with a di-  
chromatized gelatine or  
isinglass, and dried in a  
chamber heated to about  
120 deg. Fahrenheit. It  
is then exposed under a  
reversed negative, soaked  
in water to remove all  
chromium salt, and dried.  
A faint image is visible on  
the gelatine film. I have  
already mentioned the fact  
that gelatine, when heated  
with a dichromate, loses  
its solubility on exposure  
to light, but it not only  
loses its solubility, but  
fastened with plaster to the

bed of an ordinary lithographic press, the printing being very similar.  
A wet sponge is soaked in glycerine and water and the plate sponged  
over. The result will be that those parts that have been exposed to  
light repel the water, the others absorbing it. When the ink roller is  
passed over the plate the image only is inked. These three, with their  
various modifications, are the principal photo-mechanical processes of to-  
day, but they necessitate special printing presses, and are, consequently,  
only employed for special purposes.

The process of to-day is undoubtedly the half-tone method of engrav-  
ing, not because its results are superior to those obtained by the pro-  
cesses already mentioned, but by reason of its simplicity, and owing to  
the fact that the printing can be done in the ordinary typographic press,  
together with the type forming the reading matter.

The process of half-tone is so-called because it reproduces the half-  
tones of the photograph or drawing. A collodion negative is first made  
from the photograph drawing, or in some cases direct from the drawing  
itself. The collodion process is generally employed, owing to the fact



that it gives much richer contrasts, although it is a fact that dry plates are now being specially manufactured which give results very nearly as good.

If you will take one of the illustrations on this page and examine it with a magnifying glass, you will find that it is broken up into a number of small dots varying in size; in the dark portions of the image they are

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BY R. EICKEMEYER, JR.

MID FLOW'RY MEADS

THE WANTON ZEPHYR ROVES.

so large that they touch each other. This effect is obtained by placing in front of the collodion plate a glass screen having on it a number of fine black lines ruled both ways. In reality there are two sheets of glass placed face to face. On one the lines are ruled one way, and on the other they are ruled at right angles. These lines are made by mechanically ruling the glass with a diamond and filling in the cuts with a black substance. They are ruled from 80 to 200 lines to the inch, and form a fine network through which the image must pass before it reaches the plate. The result is that the image is broken up into a series of dots, ranging in size according to the amount of light passing through. The finer the screen the finer the image, although of course there is a limit

to this, and much depends on the quality of paper to be printed upon and the skill of the printer. A copper plate is polished and coated over with what is termed the enamel solution. There are various formulæ for the preparation of this, but the basis of them all is a fish glue, specially clarified and refined for the purpose. To this is added a small amount of bichromate. The coated plate is exposed beneath

the negative in a special printing frame, constructed so as to insure perfect contact of the copper plate with the screen negative. When exposed sufficiently the plate is removed from the frame and developed by immersion in warm water. The glue is acted upon by the bichromate in just the same way as the gelatine. Nearly all the photo-mechanical processes of to-day are based upon the peculiar property possessed by the dichromate of rendering gelatine and other colloid substances insoluble.

In this case the warm water dissolves away the glue that was not acted upon by the light, being protected by the opaque parts of the

BY J. CRAIG ANNAN.

“OOSTELYK DYKE”

negative. The next operation is what is termed "burning-in." The plate is kept moving over a flame, so as to heat it gradually and evenly. The image changes color until it assumes a dark brown. When cool the plate is placed in the etching bath, consisting of a weak solution of perchloride of iron, which attacks and eats away the copper where not protected by the enamel, leaving the image in relief. The copper plate is then mounted on a block of wood, and is ready for the printing press. The process sounds very simple, but I have not intended to give complete making instructions, but rather an outline to enable the reader to understand how a half-tone block or cut, as it is sometimes called, is produced. To turn out good work requires considerable skill and experience.

I am fortunate in being able to illustrate this article with some of the finest examples of half-tone work that I have ever seen. For some time it was very difficult to obtain a good printing block from a photograph, unless the latter was a first-class one in the eyes of the photo-engraver. A good albumen or aristo print gave the best results. The artist photographer naturally suffered. Possibly his best work was only produced on, say, rough surface sepia platinum paper. When such a print is reproduced by the half-tone process the effects that were aimed at by the artist are usually lost, and a poor, miserable reproduction is the result. Fortunately, there are a few firms who have successfully overcome many of the difficulties in the way of reproducing matt and rough surface prints. The reproduction of Mr. J. Kidson Taylor's picture, "A Hampshire Home," is almost a perfect *fac simile* of the beautiful original—a matt surface gelatine-chloride print. The original of Mr. Eickemeyer's picture, "Mid Flowery Meads the Wanton Zephyr Roves," is a delicate platinum. The reproduction is almost as soft and as delicate as the original.

Some very fine effects have been obtained by using various colored inks and by double printing. As an example

• A HAMPSHIRE HOME

• BY J. MASON TAYLOR

of the latter method, take the picture "Uncle Essick." The half-tone is first of all printed in black ink, and afterwards the sheets are run through the press again with what is called a flat tint. A plain block of the same is printed from with a yellow coffee colored ink. The effect of an old engraving is thus secured in a remarkably fine manner.

I must now refer to the admirable examples of color printing. These have been produced by what is termed the three-color method. The

By A. L. ECKMANN

#### "HELLO"

process may be described as one of analysis and synthesis. The pictures here given are produced directly from butterflies which form part of the fine collection of Mr. Arnold Herrmann. Three negatives are made, the plates being color sensitized by means of different dyes, each of which will absorb one-third of the spectrum and reflect the other two-thirds. The effect is further assisted by the interposition of different color screens which absorb certain rays and allow others to pass through to the plate. From these negatives positives are made, and from these positives, half-tone negatives are produced by means of the line screen already described. Three printing plates are next made, and these are printed from, one with a yellow, another with a red and the third with a blue. The superimposition of these colors and their combinations should give, in the final result, a *fac simile* of the original object. While I am not willing to

“ JUNE IN THE MARSHES.”

By KATE GREEN.

admit that such is always the case, yet it is only fair to consider the infancy of the process. It undoubtedly has a great future.

### Random Notes.

BY ESOTERICUS.

THE old year is dying fast, and the new one, with all its uncertainties, will soon be with us. Some of us, I am thinking, will not be sorry, for the year 1895 has not been altogether a prosperous one to many.

With the new year we shall all of us, of course, make new resolutions to be good, which we shall just as regularly forget a few weeks later on. I am fully determined to make but one resolution, and that is to resolve not to make any resolutions. I think I shall succeed in succeeding.

Some of our learned scientists and photographic writers, who are so fond of slinging ink and mud at each other, might do better than resolve to quit—and keep the resolution—for in the words of "Truthful James":

"I hold it not decent for a scientific gent  
To say another is an ass, at least to all intent;  
Nor should the individual who happens to be meant  
Reply by heaving rocks at him, to any great extent."

During the year the cry of plagiarism rang through the air. Some caustic individual calling himself "Verta Lacrosse" endeavored to defend

several innocent persons from the attacks made upon them, but his boldness caused his death. He died from adverse criticism. We must not speak ill of the

THE  
MICHAEL

"UNCLE ESSICK."



dead, so peace to his ashes; may he never, like the Phoenix, rise up again.

There is another man who might venture to himself make a few resolutions, a self-appointed critic. There are not many of these in this country, where common sense is not so much with fair liberality. One has only to go to the exhibitions to find him in all his glory.

The art critic is usually a quiet, unobtrusive individual who, gifted with clear common sense, tries to find out the better qualities in the works of his fellow-man. The fraudulent critic is the man who poses at some little distance from the picture, with his arms akimbo and his hat stuck on the back of his head. His whole attitude is carefully arranged, so as to attract the notice of every one in the room.

He reminds one of the bullfrog who would be as the ox. If he has any companions with him he asserts his opinions in loud tones, pointing out the fallacies of the photographer in imagining such a thing to be a picture. "It is badly balanced" he says (so is his mind, but he doesn't know it). Another picture displays lack of feeling. Poor, weak-minded fool, what does he know about feeling? When we view him, the lines of Pope are recalled to us.

"Some have at first for wits, then poets, pass'd,  
Turned critics next, and proved plain fools at last:  
Some neither can for wits nor critics pass,  
As heavy mules are neither horse nor ass."

Unfortunately, many of these frauds, with their elevated eyebrows, positive voices and a contempt for everything, whether they know anything about it or not, have so deceived the good-natured

amateur and professional photographer, amateur and professional painter, that they have been elected judges at some of the exhibitions held in this country. It is apparently gratifying to them, perhaps it is as well that it is so, for they have been, as a rule, conducted in a manner by no means conducive to the encouragement of high-class and artistic work. Professional photographers have held their conventions, where they all met together, visited the big breweries of the town and met to-

By Cembrano.

gether again, at least the few that remained sober, made some resolutions, and departed. Amateurs have held their little exhibitions, where nearly every one got a medal, and those that didn't kicked, and what good has it all been? Alas, there are many of us, I fear, who might make some new resolutions for the coming year and be the better for them, if we could only keep them.

It isn't often I do anything rashly, but the other day I had an idea—an idea so startling in its novelty that it fairly paralyzed me for some moments. I am not going to be selfish and rush off to the Patent Office at Washington and prevent any one from making use of it. I give it to the world fully and freely.

It is a process.

The first part is not new; it is the old powder or dusting on process. For the benefit of the uninitiated I will explain this method of positive printing. You take a piece of paper or cardboard, or any substance you like, and coat it over with a sugar and bichromate solution; you heat this by the fire, and when dry you expose it under a positive transparency; a lantern slide, for instance, not a negative, as you would get a negative image. When you have exposed it so for a sufficient length of time, you take your coated paper down into a damp place, and the parts not acted upon by light immediately absorb the moisture from the air and get sticky. In order to get a picture all you have to do is to dust over the paper some kind of powder, any color you like, or any kind of powder. This will adhere to the paper in proportion to the stickiness, which is, of course, in proportion to the amount of light action.

So much for the powder process. If you want fuller details you can get them from any good book on photography.

Now here is where my idea comes in, and as I said before, I have no

MY BERRY LONEY-

"ON THE LONELY SHORE."

intention of patenting it, so you can go right ahead and make all the pictures you want.

I haven't got a name for the process yet, but I will call it the "post mortem process."

It is the fashion nowadays, when one dies, to become cremated; no respectable person will allow himself to be buried in future and so assist others to follow him. He will just allow himself to be placed in a nice little oven, and come out again a handful of powdered ashes. Now, what to do with these ashes, was the next thing to be thought of, and perhaps you will now begin to see the connection. Supposing, for instance, you have a friend or a relative who dies, and want to have something that will always remind you of him. The matter is an easy one now, for I have solved the problem. You get a picture of him, make a powder process plate, from this dust over his ashes and lo! you have a portrait of him, life size say, the image composed entirely of himself, or rather what is left of him.

When your poor mother-in-law dies you need grieve no more. If you cannot have her in the flesh you can at least have her *in the ash*.

As I was walking down a street in our town the other day I came across the following sign :

.....  
 . . . JOE. ARTIST BOOT BLACK. . .  
 . . .

It reminded me so much of some of our professionals who call themselves "artist photographers." They work by rule of thumb, have no individuality; could not if they tried make anything but the conventional studio portrait, and call themselves artists. What a pleasant sight it would be to see a few photographers trying to be original in their work.

What a terrible lot of nonsense is published in the Sunday papers nowadays, and what a fool the newspaper writer makes of himself when he writes upon photographic matters. The articles upon this subject are usually written in a sensational style and utterly misleading. For instance, the New York *Herald*, in a recent Sunday issue, publishes two such articles. One is a description of a marvellous camera said to have been invented by a photographer of this city and another gentleman, and after the usual amount of bosh and self-laudation, "the *Herald* being the first to describe the, etc., etc.," *ad nauseum*, we find a description of the panoramic camera invented by Martens, of Paris, in 1847, and upon which a hundred improvements have since been made. The other article is "a revolution in color printing," and describes, as a wonderful discovery, of course, an old process that is used in nearly every color-printing establishment.

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### English Notes.

BY GEORGE DAVISON.

**THE Critics Upon Art and Photography.**—Naturally the chief topic of interest and discussion here during the past month has been that of the two exhibitions in London. These have had the effect of reviving animated discussion as to the capabilities of photography. So engaged professionally as draughtsman have done photography the honor virulently as a purely mechanical craft, and one having no capacity for the expression of personal feeling or for design.

This hostility is rather gratifying than other wise, as it implies a recognition of the rivalry and competition of photography with other black and white methods of graphic representation.

Direct photography has taken such a place in illustrated journalism that many professional illustrators are from jealousy very ready to point out its defects as compared with certain qualities of their own hand-

"A BIT OF LONDON."

"SKETCHING IN THE BOIS."

drawn sketches. In their haste to prejudice publishers, magazine proprietors and the public against direct photographs, as well as against process work, they have overlooked the fact that even badly composed and badly reproduced photographs from Nature always have a naturalness and interest of truthfulness which is very attractive, and is essential for many of these newspaper illustrations if they are to have any future value.

It is always assumed by draughtsmen, critics, or their literary mouthpieces, that all drawn illustrations have a quality of personality, design, selection and subtle analysis about them ; but the fact of the matter is that we find these qualities only in the work of the few finest artists, whilst all the great army of second-rate draughtsmen go on repeating a certain style and limited knowledge, in a manner almost as mechanical as that of the worst photography.

The draughtsman would limit the term art to pen and pencil drawing. To them art, so they now say, is invention and fanciful interpretation or pattern making. To the photographer the greater art appears to be in getting into the illusions we call pictures something of the feeling of beautiful appearances of Nature which the artist may select. The fact is, that both feeling, as well as design or composition, are necessary. Photography is weak or limited in regard to detailed selection, but it is capable of being used by an artist to seize on an effect, a feeling that impresses him, whether seen on the face of Nature or in the human face, and together with this there is considerable scope for decorative arrangement.

The difference in respect of art power between pencil and camera work is not one of kind, but only of degree. The brush and pencil are more flexible machinery, and their results are more personal and direct, but they have no monopoly of artistic presentment. To deny the possibility of art in photographs is to deny that the individual and pleasing presentment of selected impressions is art.

**High-Altitude Photography.**—In an interesting account of experiences and scientific observation, Captain Abney states that the light in the Alps has been exceptionally active photographically during August and September in the recent hot summer. In these months the atmosphere has been exceptionally free from water and dust particles (which give rise to the effect of blue sky), as well as from larger particles in the zenith, which reflect light in an unpolarized state.

From observations made as to the relations existing between the number of particles in the air and the height of the barometer, and as to the scattering of photographically active rays, Captain Abney makes the following statement of the law governing the matter : The intensity of

the light varied as the numbers of which the barometer heights were the logarithms; that is to say, *if the height of the barometer at any altitude was half that of the barometer at sea level, the intensity of the sun's light for photographic purposes at the high altitude would be between five and six times greater than at sea level.*

In such a season as that just past Captain Abney considers some form of actinometer very necessary. He found his method of gauging exposures by a scale of gradation to be very effectual. We have already described this ingenious method in some of our recent notes.

**Death of Mr. B. J. Sayce.**—The recent death of this gentleman is very worthily being made the occasion of a subscription and memorial, in recognition of his important work and discoveries with collodion emulsion. Photography and photographers all over the world have benefited by those discoveries and results, and it is to be hoped that a representative contribution will be made. It is perhaps hardly necessary to add that

the work and honor were shared by Mr. W. B. Bolton, who still makes interesting and valuable contributions to the pages of the *British Journal of Photography*, as the following note may indicate.

**Anti-Halation Pads.**—

In a note on the subject, referring to the commercial introduction of prepared pads for squeegeeing to the backs of sensitive plates, Mr. Bolton gives some useful hints for architectural photographers and others. The method, now revived, of using pieces of black carbon tissue impregnated with glycerine, was used by Mr. Bolton twenty years ago, and when properly em-

By Lydell Sawyer.

"THE BOAT BUILDERS."



ployed, is said to effect the purpose as well as any method of backing the plate. Mr. Bolton's experiments went to show that when carbon tissue was used, prolonged and careful soaking in glycerine and water was required, in order to ensure complete permeation and limpness, and consequently optical contact.

The gelatine film imbibes the glycerine somewhat reluctantly, and unless perfect limpness is secured and good contact, the effect where the pad does not touch is probably to increase the halation. In a case of an over-exposed window, in those places where the tissue did not properly attach itself to the glass, Mr. Bolton found absolute reversal of the image, arising through halation. Before using such a method it would be well for every one trying it to experiment first in a good light, to make sure of the conditions for perfect contact. If plain glass be used, the contact or otherwise can be well seen through from the front.

This method of backing is certainly much more convenient in many respects than that of painting or varnishing the backs of plates. Mr. Bolton holds that no backing will effect a perfect remedy, but it does a great deal, and is of very great importance (as we have found with some plates), for many other subjects besides interiors. Most workers have used glycerined paper or some form of pad, but it is understood that the commercial articles now put forward are simpler and more efficient in use than these home-made applications.

**A Pocket Stereoscope.**—This is a new and ingenious device by Mr. Theodore Brown, consisting of a small tube with two mirrors at the end, mounted obliquely face to face. In use these mirrors are pointed to the two stereographic prints, and the right eye of the observer is placed at the other end of the tube. The left eye *looks direct* at one of the views whilst the right eye sees through the tube a corresponding point in the other view, the image of which, by the position of the reflectors, is projected so as to blend with the left eye view.

**Iron in Platinum Prints.**—Mr. J. H. Baldock publishes notes of some experiments to prove that iron is always more or less left in every part (even where no image is impressed), of a platinum print, even after prolonged treatment with acid, and he concludes that the dyeing of the image produced by the application of a catechu solution is chiefly due to action between the astringent matter of the catechu and the iron in the print. It has been suggested that to make such experiments fully satisfactory, the paper used as a support itself should be tested for iron.

**Hypophosphite of Soda in Developers.**—Herr Schnauss reports that Dr. Neuhaus has found that a small quantity of hypo added to the amidol developer, considerably increases the density of the resulting negative.

If more than a certain quantity of hypo be added, the result is a retarding action, but without any tendency to fog, as is the case when hypo is added to the ferrous oxalate developer. Herr Schnauss finds the same accelerating effect is gained by adding hypo to hydro-quinone developer.

**New Sensitizer for Red.**—Dr. Eberhard is said to have found that a bisulphite compound of the alizarine blue renders gelatino-bromide plates more sensitive to the extreme red of the spectrum than will any other sensitizer of this kind.

**Exhibition of Photographic Art in Brussels.**—An exhibition on the same lines as the London and the Paris photographic salons is being organized in Brussels by those who are interested in the artistic progress of photography. The exhibition is to be by invitation, and it is hoped will be as signal a success as the one held a few years ago in the same place. Another exhibition is announced to be held in Brussels early in 1896, but we do not know on what lines it is proposed to organize it. In regard to all these exhibitions it is becoming the practice amongst the best picture workers to decline to exhibit at the ordinary mixed competitive exhibitions, and to keep their work for the exhibitions where the conditions of strict selection and arrangement are more congenial to the art purpose in view.

**Chemical Coloring of Lantern Slides.**—When visiting London recently, with M. Hector Colard, Mr. Alexandre gave an exhibition of lantern slides of figure studies, in which, by a method of blocking out with wax and local toning with uranium nitrate, the flesh tints of the figures were rendered with considerable effect. As is usual in these matters, two or three gentlemen have sprung up at once to claim priority in use of the method.

**Photographs of Galloping Horses.**—Some photographs of horses galloping, which are stated to have appeared in a contemporary, go to prove that the extended position of fore and hind legs, so conventional with artists, is quite a natural one. We have not as yet examined the illustrations, but it is authoritatively stated that the photographs show exactly the old conventional position, which has been said to be an impossibility. The view taken by some students of animal movement has been that the position of stretched out forelegs and hind legs is an absurdity, and could only result in collapse of the animal, and these snap shots are therefore of considerable interest. We have ourselves seen photographs showing the forelegs of a horse reaching *slightly* forward at the same time that the hind legs were extended a good deal backward, but the pairs of legs were not together, but one in advance of the other, and in no case were they stretched out fully in the conventional style.

**Washing Albumen Prints.**—Mr. W. H. Sherman's note of his plan of

adding dilute carbolic acid to the washing water is very interesting, but possibly some other antiseptic might be used without the objections found with carbolic acid. We refer to the article here, because the statement is made that to remove all the hypo that can be removed by ordinary means of washing a period of from twelve to twenty-four hours is required. Our recollection of Messrs. Haddon and Grundy's experiments is that they proved that all the hypo to be removed could be taken out in ten minutes by complete changes of water.

**Grants for Research**—The Photographic Convention of the United Kingdom, having accumulated certain funds, have decided to make grants to individuals to assist them in making original investigations into scientific matters of photographic interest. The regulations governing these grants have been published.

**Developing Competition**—In conjunction with the London Photographic Club, Mr. Alfred Watkins has organized a competition to test some disputed points in development. Money prizes are offered for the negatives, which, cut in two and developed by different methods or different developers, show the greatest contrast or divergence in printing gradation. Mr. Watkins holds that control in development is practically limited to length of time and control of fog, and this competition is to test the point.

**Cheap Enlargements**—The photographic press here has been up in arms against an enterprising public journal which has adopted the plan of increasing its sale by supplying cheap bromide enlargements. The device is to give a finished 15 x 12 enlargement, from any photograph, in return for five shillings and four coupons cut from the pages of the journal. The photographic press deprecate this scheme, as tending to do many small photographers and professional enlargers considerable injury. This may or may not be the case, but every method of supplying the public on a large scale with cheap articles, must cut at those who are small dealers in those articles. The product is probably not worth more than the five shillings demanded, although the wily advertiser asserts it is worth more than half as many guineas. It is not, for a publisher, a high-class method of obtaining money, but, on the other hand, the small professional photographer cannot expect the public to pay more than the real value of an inferior article. We know of instances where men have taken to photography because of its simplicity and to make an easy livelihood and avoid harder work, and such as these can hardly expect much sympathy to be expended on them.

**Cheap Plates**—The latest move amongst enterprising plate manufacturers has been to make the price of all the different grades of plates the same, from the most rapid to the slowest. The price of the rapid plates has been lowered to the same as that of the slowest, and so one uniform price is fixed for all the various qualities sold by the firm. It is wonderful how it can be done.

*London, Nov. 10, 1895.*

## Beginners' Column.

### CHAPTER XXV.—LENSES.

BY JOHN CLARKE.

**A**LTHOUGH the lens is the most important item in the photographic outfit, it is the one that the average photographer knows least about, and although, in the "Beginners' Column," I cannot find room to tell him all that he ought to know, I must devote at least one chapter to it.

A lens, in its simplest form, is a disc of glass or other suitable transparent media, thicker at the center than the edges; ground, in fact, on one or both sides to a spherical curve, as an ordinary spectacle lens. A ray of light falling on such a lens perpendicular to its axis—that is at a right angle to its surface—passes right through and goes on its way unchanged; but rays falling obliquely are bent or refracted towards the perpendicular; that is, towards the center, and cross each other at a point closely related to the angle at which they fall, consequent on their distance until that is so great as to make them practically parallel, after which that point is a fixed quantity, dependent on the degree of curvature and density of the glass.

This crossing point is said to be the focus of the lens, as it is here that a distinct image is formed which is made visible by transmission through a translucent body, such as the ground glass, by reflection; or when examined by an eye-piece, such as Ramsden's. In certain branches of commercial and scientific photography, where very accurate focusing is required, focusing in air, as it is called, by aid of the eye-piece, is of great advantage, as with even the finest ground glass it is difficult to ascertain the point of greatest sharpness in the ordinary way. For this purpose the most convenient way is to let one or two drops of Canada balsam fall on the center of the ground glass. Apply a gentle heat till it begins to bubble, and then lay on it a disc or small square of microscope cover glass, pressing it down, and, if necessary, giving a slight lateral motion to exclude air bubbles. When quite hard, which may be in a day or two, the superfluous balsam may be removed with turpentine on a tuft of cotton, and the result will be practically a polished disc or square in the center of the focusing screen.

The eyepiece made for this purpose slides in a split tube having as screw collar, by which it can be fixed so that when the end of the tube is held against the back of the ground glass the focus is exactly on the ground surface. When the image has been adjusted and focussed in the ordinary way, the eyepiece is placed over the transparent disc, and perfect sharpness obtained without the disturbance incident to the roughened surface.

But with such a simple lens, made of one piece of glass, the image formed at or about the point where the line seems to cross is too imperfect for photographic purposes, suffering as it does from both spherical and chromatic aberration. By spherical aberration is meant a deviation of the rays refracted by the lens, so that they cannot be brought to a focus at the same point; those passing through the margin being more bent and crossing nearer to the lens than those nearer the center. In such a lens there is no absolute focus; that is, no point at which a sharp image is formed, the focus, such as it is, being anywhere between the points at which the marginal and axial rays cross.

Spherical aberration may be corrected, as in the case of a telescope lens, by the employment of two discs of glass of different refractive power and suitable curves, so that *direct* rays through the full aperture will be brought to a perfect focus; but for oblique rays, essential in, say, landscape photography, such a lens would be useless. But while the telescopic image is never examined but through a powerfully magnifying eye-piece, and must of necessity have perfect definition, the photographic image that will bear magnifying three or four times and appear sharp all over is satisfactory. The correction of a photographic lens for spherical aberration is therefore a compromise in which the faults may be said to be reduced to a minimum, and what there are spread equally all over the field.

Chromatic aberration, literally color wandering, is not a result of lens curvature, but arises from the fact that the color rays of which white light is composed have different degrees of refrangibility. It is convenient, although not quite accurate, to speak of them as three—red, green and violet—and to ascribe to them separate properties—heating, lighting, and actinism or chemical action. When a beam of white light passes from a rarer into a denser medium—from air into a lens, it is bent or refracted towards the center, so that two entering at, say, near opposite margins, will be so bent as to cross each other at a certain distance. But as the green ray is more refrangible than the red, and the violet more than the green, they cross or come to a focus at different points, the red farthest from the lens, the violet nearest to it, and the green midway between. An attempt to photograph with such a lens must result in an image very much out of focus, as the camera would be focussed at the visible image made by the luminous rays, a combination of the red and green, while the image would be formed by the violet rays, about one thirtieth nearer the lens.

It is possible, however, by the employment of glass of different densities, a crown and a flint; the one a positive or converging—a convex, the

other a negative or dispersing—a concave ; to make the three rays cross at one point, and such a lens is said to be achromatic. For telescopic, microscopic, and what may be called visual purposes, the corrections are made so as to bring all the rays to the point at which the luminous rays cross, but for photographic work the point of coalescence must be that of the violet. Such a lens is not only achromatic, but is said to have its visual and chemical foci co-incident ; and all good photographic lenses are so corrected.

Such a lens, either as a plano-convex or more or less deep meniscus, was at one time almost universally employed for landscape photography, and is still to a considerable extent, especially in the cheaper outfits. It is known to us as the single lens, as although composed of two elements they are cemented and form one whole. It is sometimes spoken of as “the old landscape lens,” and for landscape pure and simple, where great rapidity is not essential, is at least equal, if not superior to the best of modern instruments. It has, however, two faults, by which it is considerably handicapped. As generally constructed, it retains spherical aberration enough to require stopping down to about  $f/20$  ; that is, that a stop or diaphragm with an opening not larger than one-twentieth of its focal length must be employed to secure good definition. Now, as the rapidity of a lens depends altogether on the relation that the working aperture bears to the focal length, and the ordinary rectilinear lens works at  $f/8$ , it will be evident that the difference is very considerable ; the single lens in fact requiring eight times the exposure necessary with the rectilinear.

The other fault is the curvature of straight lines. However perfect otherwise a single lens may be, it cannot be made to reproduce as straight any of the straight lines of the subject, except the central horizontal and central vertical. These two are always straight, but every line to the right and left, and above and below, must inevitably be more or less curved, beginning with those next the central lines, and the degree of curvature increasing toward the margins, producing what is called barrel-shaped distortion. The single lens is generally arranged with its flat, or, if a meniscus, its concave surface, toward the object, and with the diaphragm at a suitable distance in front, and so arranged gives this barrel-shaped distortion. If, however, the arrangement be reversed by turning the mount, so as to present the convex surface to the object, and have the diaphragm between the lens and the focussing screen, curvature of the lines will still be produced, but in an opposite direction. Instead of curving out they now curve in, and produce what is called pincushion distortion.

Keeping this in mind, it would seem that there should have been little

difficulty in producing a lens that would give straight lines—a rectilinear lens—by simply placing a second single lens at the opposite end of the tube, or mount, and having the diaphragm between, so that the two equal but opposite curvatures might neutralize each other. But simple as it now seems it was not done till a number of years after the cause of the curvature was known, and after the introduction of a considerable number of more or less unsuccessful “non-distorting” lenses; and it may now be said to be the system on which almost all of the modern lenses are constructed, including rectilinear, rectigraphic, symmetrical, doublet, aplanat, euryscope, etc., and even the more recent anastigmats. The various makers adopt various methods of correction, and employ glass of very different densities, each with a view of getting some advantage over the others; and some are made symmetrical; that is with both front and back lenses alike and of the same focal length, while others are of unequal lengths, which, as either may be used separately as single lenses, gives the possessor practically three lenses instead of one.

*(To be Continued.)*

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## When Are Silver Prints Liable to Fade?\*

BY DR. LEO BAEKELAND.

PHOTOGRAPHIC printing took a step backwards by the reintroduction of the “combined bath.” The past history of this objectionable method was such as to make everybody cautious against using it. The “combined bath” method is undoubtedly very attractive to those believing in it. It is simple and quick, and can be used with advantage whenever the lasting qualities of the prints made by it are not taken into consideration. The danger lies not in the method itself, as long as those who use it know what they may expect in regard to probable permanent results. No, the harm has been done specially by those who should have made every possible effort to tell the truth in this matter. Manufacturers of photographic papers, by recklessly or ignorantly recommending combined baths with their products, have aided very much to give their own articles of manufacture a very bad reputation of uncertainty. If albumen paper has still many faithful followers, the fact is mostly due to the understanding that this paper at least has not been abused and tortured with combined baths.

Many have been the discussions on the subject. I am glad to state that now there is a decided change of opinion in favor of separate baths.

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\*Read before the Society of Amateur Photographers, New York, on Nov. 14, 1895.

However, we still notice very contrary assertions. Most of the combined bath advocates will tell you that many of the combined baths are not reliable, but that they have their own formula, on which you can safely depend. As proof, they will show you prints which have kept well for years. They explain all failures as due to exhausted baths, wrong temperature, imperfect washing, impure chemicals, etc. Let me say right here, that such assertions are merely based on illusions. If some combined bath prints have kept well, this in itself is not a proof of permanency. It is merely a proof that they have not faded, and this may have been due to the fact that they have not been subjected to such strong influences as to change them. In other terms, the question is not: "Will this or that print fade?" but "Are they liable to fade, and in how far are they liable to do so?"

In the actual conditions a photographer turns out every day a certain number of prints, and has to rely on his own guessing, or on hearsay, when it comes to the question of permanency of his products.

There was a time when bridges, buildings and machinery were constructed without much accurate knowledge of the resisting strength of materials. Each undertaking of the kind was an experiment in itself. The builder used the alternative of either wasting material by making his construction unnecessarily heavy, or by finding afterward that the results of his work were unsatisfactory as regards strength.

Modern industry is no longer satisfied with this, and wants more accurate information. Modern engineers have their materials carefully tested chemically and physically, and this enables them to obtain the most reliable results in the most favorable conditions.

In the manufacture of guns, armor-plates, bicycles, etc., testing has become an important factor, and has helped enormously to develop and perfect these industries.

Bicycle manufacturers, for instance, do not decide on the quality of their machines by idle words, but by substantial tests. They do not admit as proof that a machine of inferior make is as good as theirs from the fact that one has lasted as long as the other, because neither of them may have been subjected to severe work, or strain sufficient to decide the question of quality.

Why should not the same methods be adopted for determining how far photographic prints are liable to fade? Let us see now which are the most appropriate tests which will give us an idea about the relative permanency of silver prints. A popular test amongst photographers is to subject the print to the action of strong sunlight for several days.

If there is no change in color, this is considered a proof of permanency. This test is very incomplete and superficial, and has led to many errors.



I have seen "combined bath" prints behave very well in sunlight, yet they faded badly when kept in an album or in a closed box. Furthermore, it is a known fact that pure uncoated paper, bearing neither image nor silver emulsion, will turn in color when subjected to the action of sunlight. The most expensive and best white paper, such as is used for platinum or bromide paper, will change in color if submitted for a few days to sunlight.

Baryta coated papers will change just as quick under the same conditions, and as they are always slightly tinted pink or *pensé*, their tint will become somewhat greenish. I have seen some of such papers change after one hour's exposure to the sun. By the result of such tests, which I show you here, you can judge for yourselves as to the extent of the change in color. You will notice that, some tints of writing papers and particularly newspapers, become dark yellow when exposed to the sun for several days. These changes in the tint of the paper should not be mistaken for a fading of the print. The latter is caused by a thorough transformation of the silver image, under the influence of chemical agencies. In order to study the cause of such fading, let us examine briefly the nature of the silver print itself, and let us enumerate some of the possible influences which affect it. The early chemists classed silver, together with gold and platinum, amongst the noble metals, in opposition to the non-noble or base metals, which are lead, copper, iron, nickel, zinc, etc. This distinction was chiefly based on the fact that noble metals withstand direct oxidation, and that most of the chemicals have little or no action on them, while base metals are easily oxidized and affected by most chemical agents.

Gold and platinum will not be affected by any of the regular constituents of the atmosphere, and that is the reason why these two metals remain perfectly bright and untarnished. More than that, it is well-known that gold coins, which have been kept under unfavorable conditions for thousands of years, have retained all their lustre. Silver would behave just as well as gold and platinum were it not for the fact that it has a great affinity for sulphur, and will combine readily with this latter element whenever it has a chance, and this is the reason why silver is liable to tarnish. The slightest trace of hydrogen-sulphide in the air, will cover it very soon with a very thin, yellowish film of silver sulphide, which will become brown, then finally turn black.

There is a bright silver dollar piece, and you observe that as soon as I bring it into this bottle, in which I have produced some hydrogen sulphide, it becomes covered with a black deposit of sulphide of silver.

Sulphur emanations are nearly always present in the atmosphere, be it as plain hydrogen sulphide or as more complex compounds. Therefore

it is rather difficult to keep silverware in bright condition. Imperfectly purified light gas, burning coal, decaying matter, etc., are so many sources which bring sulphur into the atmosphere. The action of hydrogen sulphide on silver prints may probably be helped by the simultaneous presence of ammonia or humidity. All other conditions which favor chemical action may hasten the process of fading. Amongst these favorable conditions I should mention increase of temperature, and extreme division of the reacting bodies.

The action of heat as an accelerator of chemical reaction is so well-known that I can dispense with insisting long on this point. A great number of chemical reactions will not occur at a low temperature, but will proceed easily by increasing the temperature. The influence of the state of division is accepted by all students in chemistry. Where gases act upon solids, this action will be rendered more immediate and more complete if the solid has been reduced first to an impalpable powder. Where a solid piece of iron may last for centuries, even when exposed to damp air, this same quantity of iron, in the shape of filings, will degenerate quickly into a brown, rusty powder. Chemists know of a method of producing iron in a shape much more divided, much finer than the finest and most divided iron filings, so fine, indeed, that it could not be obtained by mechanical means. In this glass tube I have some such finely divided iron. You will notice that this glass tube has been closed by melting it at both ends. This precaution was absolutely necessary, because this very highly divided state of iron is so susceptible to chemical changes that it would combine itself instantaneously to the oxygen of the air and undergo spontaneous ignition.

As soon as I break the end of this tube and scatter its contents into the air, you notice that each particle of iron becomes incandescent, and by gathering some of the products on this white plate you will notice that these particles have acquired a brownish color, which is the color of iron oxide.

This example enables us to understand how silver in a more or less divided state will be more or less liable to undergo the action of chemicals, and especially of hydrogen sulphide. Let us add at once that the photographic image is made up by silver in an extreme state of division.

There are many substances which, although having absolutely the same chemical composition, can exist under two or more modifications of entirely different properties. There is an element, for instance, which is known under the name of phosphorus, and which enters as the chief ingredient into the manufacture of lighting matches. This phosphorus is known under at least two different states, which are designated by chemists as allotropic modifications. Phosphorus in its usual condition is trans-

parent, colorless or slightly yellow, brittle when cold, but soft at summer temperature and it melts in hot water ; it is a great poison, is soluble in carbon disulphide, and has such an extremely great affinity for oxygen that it enters quickly into spontaneous combustion when exposed to the air. That is the reason why it has to be preserved under water. Now, there is another allotropic state of phosphorus which can be produced by certain methods. In this state phosphorus is red, hard, insoluble in carbon disulphide, non-poisonous, it melts only at a relatively high temperature, and can be kept without the slightest danger even in dry condition ; it will only take fire at a relatively high temperature ; it shows none of the strongly accentuated chemical properties of the white variety of phosphorus. Silver, just the same as phosphorus, also can exist under several allotropic states. This explains why one kind of silver-image may prove much more permanent, *i. e.*, much more resisting to chemical influences, than the other.

The silver precipitated by development in the image of a bromide print or a bromide plate is in an entirely different condition from the silver in the image of a printing-out paper. If we examine the image of a bromide print or bromide negative under the microscope, we find that it is composed of a multitude of little silver particles, very distinct in shape, and of measurable size. If, however, we examine under the same magnifying power the image of a printing-out silver paper, we fail to observe distinct silver particles. The whole image seems to be formed by such extremely thin particles of silver that they appear more as a homogeneous stain. I have some doubts whether the printed-out silver image can be compared at all to that one of a bromide print, or any other print obtained by development.

Whereas, we are sure that in a bromide print the image is formed by the juxtaposition of particles of pure precipitated silver, it is very probable that in printing-out papers the process of reduction is not so radical, and what is called commonly a silver image, for albumen, gelatine or collodion paper, is probably nothing more than a darkened organic silver compound, or product of partial decomposition of the original chloro-organic silver compound. Were this image the same as a bromide image, plain fixing in hypo ought to produce a print approaching a degree of permanency somewhat similar to that of a bromide print, and experience shows that this is not so. Even the process of gilding, *i. e.*, toning, does not succeed in making it as permanent as a bromide print. The natural conclusion is that either the printed-out image is not pure silver, or if it contains any metallic free silver it exists there under a special allotropic modification which is so easily affected by chemicals that it is rather liable to fade.

In a printing-out paper the image has so little resisting power that

even water will act upon it. Indeed, it is a known fact that such silver prints, even when they are toned and fixed in separate baths, will be affected by water, and bleach out by and by if left in the washing tank too long.

The more are they liable to undergo these changes if they are toned in combined baths, as can be readily proven by direct tests. Why is this so?

It is generally stated that the lack of permanency in combined bath prints is due to the fact that the prints have become sulphurized, and that the silver has become sulphide of silver. If this was the only reason, I fail to see why bromide prints toned in hypo-alum, and which have been integrally transformed into sulphide of silver, also prove to be very permanent, and can easily compare in this respect with the best of prints made on albumen and toned with gold.

In a printed-out image the layer of silver is either so thin or in so delicate an allotropic condition that in order to render it somewhat more resisting it has to receive a deposit of gold or platinum.

By sulphurization such an image can only be made still less resisting, and rendered more liable to further alteration or fading. In a bromide of silver print this is not to be feared so much, on account of the more resisting qualities of the silver therein.

It may be, also, that in a printing-out paper the sulphurized image is not pure sulphide of silver, but a sulphur organic compound of silver, more apt to change than would be the case under the same circumstances, for pure sulphide of silver. In fact, we know that silver sulphide is a product which stands very well the action of chemical agents, and which can only be dissolved in some strong acids. In Nature we find it as a mineral, known under the name of argentite, and in this state atmospheric agents have no influence on it.

All this points out once more that there is a radical difference between a developed and a printed-out silver image. This is further corroborated by the fact that bromide prints can stand better small quantities of hypo, which may remain in the fiber of the paper. As a rule they are more refractory to chemical agents; they are not easily affected by hydrogen sulphide.

A remarkable fact is that bromide prints can give permanent prints even when toned in a sulphurizing mixture of hypo and alum. I wish to add here that different kinds of bromide emulsions behave very differently to the action of hypo and alum. Some such emulsions will tone in less than one hour, while other ones will require one day or more. I have observed that slow bromide papers tone much easier than quick bromide papers. By observing the easy toning papers under the microscope I

found that their images have very small particles of silver, while the slowing toning ones show a coarser grain. Here is a very striking confirmation of what I said before in regard to the relation of the size of the silver particles and their relative permanency.

Coming back to the question of combined baths, I ought to say, that in mentioning the evils referred to, there is to be added another one, i. e., the lead salts. These lead salts are added to the mixture in order to make sulphurization more regular, by a rather complicated chemical process. But the lead salt fastens itself in the tissue of the paper, and no amount of washing can remove the last traces of it. The ultimate result is that the white of the print will darken and become degraded by and by, because the lead salt under the action of hydrogen sulphide will produce lead sulphide, which is black or brown.

In regard to the vehicle which carries the print in printing-out paper, I have come to the conclusion that it matters little whether it is gelatine, albumen or collodion. Endless discussions are still going on as to which kind of prints is most permanent. It has been said and repeated that gelatine is not as stable a product as nitro-cellulose, which is the basis of collodion. To this it can readily be answered that gelatine has proven beyond doubt to be a trustworthy medium, and will give permanent prints. Bromide prints, bromide plates, the carbon process, and Woodburytype process, have given it a record of reliability. We know, furthermore, that gelatine in a hardened condition withstands wonderfully humidity or friction. A collodion plate, on the contrary, is much more liable to abrasion. The film which carries the image is necessarily thinner, and the quantity of silver which can be introduced in a collodion emulsion is very limited, as compared to a gelatine emulsion.

A fair amount of silver is necessary to give body to the print, and if the print lacks in silver it will fade much quicker, even if it is toned with gold or platinum. I am not aware that since the introduction of collodion papers, anybody has ever reminded us of the fact that under certain conditions nitro-cellulose is liable to undergo spontaneous decomposition. I am now in possession of quite a large sample of nitro-cellulose, which was made for collodion paper purposes, and which was offered to me by a reliable firm; after a few months' preservation it shows already in an unmistakable way the presence of nitrous vapors. This spontaneous decomposition of some kinds of nitro-cellulose is a fact well-known by many old photographers, who made their own collodion. In how far this spontaneous decomposition of nitro-cellulose may occur in collodion prints has not yet been determined accurately.

If it really occurs, the resulting nitrous gases would undoubtedly prove very destructive to the silver image, and help the fading thereof.

Except in such an emergency as above referred to, we can accept the fact that gelatine, albumen or collodion may all yield permanent prints if properly handled, and toned in separate baths. A good, thick image, rich in silver, and toned to a deep purplish purple with a fair amount of gold, will prove to have the best lasting qualities.

The fact that a printing-out paper requires little gold to be toned, makes the permanency of such prints questionable. Thorough fixing and washing should of course be adhered to. I must say, however, that there is a limit in the time of washing, which should not be exceeded. When this limit has been reached, any further stay in the water will only lower the quality of the prints. Any paper should be thoroughly washed in one hour, provided the water is changed frequently, and the prints kept moving all the time. The fading of combined bath prints has so often been ascribed to imperfect washing, and yet it is a noticeable fact that such prints will become worse and worse by being left too long in the water, especially if the water is warm.

Any perceptible amount of hypo, if left in printing-out papers, will quickly affect the image and will destroy it by and by. Bromide prints are not so sensitive to traces of hypo. I know of one instance, where a firm, in order to rush out its orders on bromide prints, had to limit the washing very much. The result was that a notable amount of hypo was left in the prints, so much in fact, that by the tongue any one could easily detect a very pronounced hypo taste. These prints have been made now more than a year, and I must say that they have stood the test of time very well. I wish to add, however, that I would consider such imperfect washing rather reckless, even for bromide prints.

And, now, what is the easiest method for testing the relative permanency of prints. As told before, hydrogen-sulphide in the atmosphere is the most destructive agent for silver prints. After more or less time its action will be more or less apparent. In order to find out how prints are going to behave we may subject them to an atmosphere saturated with hydrogen sulphide, and accomplish in this way in one hour what otherwise could only be determined after a test of several years.

Hydrogen-sulphide can easily be produced by pouring some acetic acid on a piece of potassium sulphuret. This latter chemical is well-known by all photographers, who use it for precipitating their silver from their waste hypo.

The only drawback of the hydrogen-sulphide method is the obnoxious smell of this gas. Therefore the test should be performed outdoors, where nobody will be incommoded by its disagreeable smell. I ought to guard you also against the great danger of spoiling your silvered paper or dry plates by the emanations of this gas.

Select a wooden box, relatively tight, and provided with a cover, take all the prints which have to be compared and have them all under the same conditions, i. e., they should either be all mounted and burnished or not mounted at all. Cut each print in two, keep the upper half for future comparison, and place all the lower halves upright against the walls of the box. In the center of the box place a tumbler, with a piece of sulphuret in it, of about the size of a hickory nut. Then pour some acetic acid on it, and cover the box at once. Leave the prints in this box for about half an hour, and examine them from time to time.

The test will show that any combined bath prints, whether collodion or gelatine, will bleach first, much later albumen prints will start to fade, after which comes the collodion or gelatine papers toned in separate baths. Bromide papers stand the test longest, and change very little. I thank you for your attention, and hope I may have thrown some light upon the causes of the fading of silver prints.

---

**Desirable Lenses.**—For hand camera work a lens at full aperture, which gives a brilliant illumination and a sharp image all over the plate, is the kind that is most wanted. A lens of this character is the Goerz double anastigmat, of which Dr. Eder says: "We had in our hands a very good double anastigmat of 12 cm., equal to  $4\frac{3}{4}$  inches focus, which at full aperture amply covered a  $3\frac{1}{2} \times 4\frac{3}{4}$  inch plate sharply, and proved to be an excellent lens when applied to a hand camera." The lens is made of superior glass and after a special formula.

---

**New Quarters of the Scovill & Adams Company.**—Since Mr. G. Gennert moved to his spacious store uptown, the center of trade in photographic goods has been uptownward, to correspond, we suppose, with the general movement of the resident section. The Scovill & Adams Company have determined not to be behind in the movement, and on January 1, 1896, we are informed, will move to Nos. 60 and 62 East Eleventh street, five doors west of Broadway, almost adjoining the St. Denis Hotel. It will be a very convenient location and doubtless will be the means of their building up a large retail trade. The company has been re-organized under the style of the Scovill & Adams Company, of New York, having W. Irving Adams as President, W. I. Lincoln as Vice-President, and Edward R. Young, Jr., as Secretary. The building is 42 feet wide by 95 feet deep, and is seven stories high. There is to be a commodious skylight on the roof, facing the north, access to which is had by an elevator from the ground floor. It will be a great improvement over the present narrow, long, dark building.

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**Commencing** with the January issue of the *Photographic Times* the editor of that magazine will begin the publication of an encyclopædic dictionary of photography. It will be the most extensive work upon the science of photography that has ever been attempted, and will contain over 2,000 references and more than 500 illustrations.

# THE AMERICAN AMATEUR PHOTOGRAPHER.

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A Monthly Review of Amateur Photography.

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VOL. VII.

NEW YORK, DECEMBER, 1895.

No. 12.

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ALFRED STIEGLITZ.

EDITORS

F. C. BEACH.

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Yearly subscription, in advance, postage paid, United States and Canada, \$2.00; Foreign Countries, \$2.50. Single Copies, 20 cents.

Remittances may be made at our risk, by Post-Office Money Order, Draft or Registered Letter, to the order of the AMERICAN PHOTOGRAPHIC PUBLISHING COMPANY.

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Items of general interest upon photographic subjects will be gladly received.

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## Editorial Comment.

*The Close of the Year.*—With this number of the AMERICAN AMATEUR PHOTOGRAPHER we close Vol. VII. of the magazine. The past year has been a most successful one for us, our readers being more than satisfied with our endeavors to raise the standard of pictorial and scientific photography. The present number before you is certainly the finest thing yet offered to the photographic reading public; it has been gotten up at a great sacrifice of money and labor, and will certainly be duly appreciated. We endeavor to give our readers new matter and new pictures, and not to pad our magazine, as is the wont of the majority of the American photographic magazines. That this is also appreciated is shown by the steady increase in our circulation, which easily ranks first amongst the photographic magazines of the United States. Wishing our readers a very Merry Christmas and a Happy New Year, we hope that they will continue their kind support for the coming year.

*The Various Photographic Salons.*—All countries except our own have fallen into line, and hold their annual photographic salons in the interests of pictorial photography. It is regretted that the United States should be so slow in taking this matter up seriously and earnestly. Pictorial photography has certainly won its rights to be termed a fine art; it has had an uphill fight and has won a noble battle. There is good work being done in the United States, but somehow or other each man works for himself in a most selfish way. This selfishness will certainly act as a boomerang at no distant time. Exhibitions are absolute neces-



sities for educational purposes. Is it not time for those interested in the advancement of American pictorial photography to take this matter up seriously? Here we are at the end of 1895; let the new year bring forth results in this important matter. Our editor, Mr. Stieglitz, is open to communications on this subject.

We also wish to call our readers' attention to the fact that in order to be ready for a photographic salon, it will be necessary to go to work at once and produce pictures. One picture a year is better than a stack of worthless photographs. The London Salon, just closed, was a success from every point of view. Why do we lag? 1895 has been termed an American year in sporting matters. Let us try to make 1896 an American year in matters photographic.

### Society News.

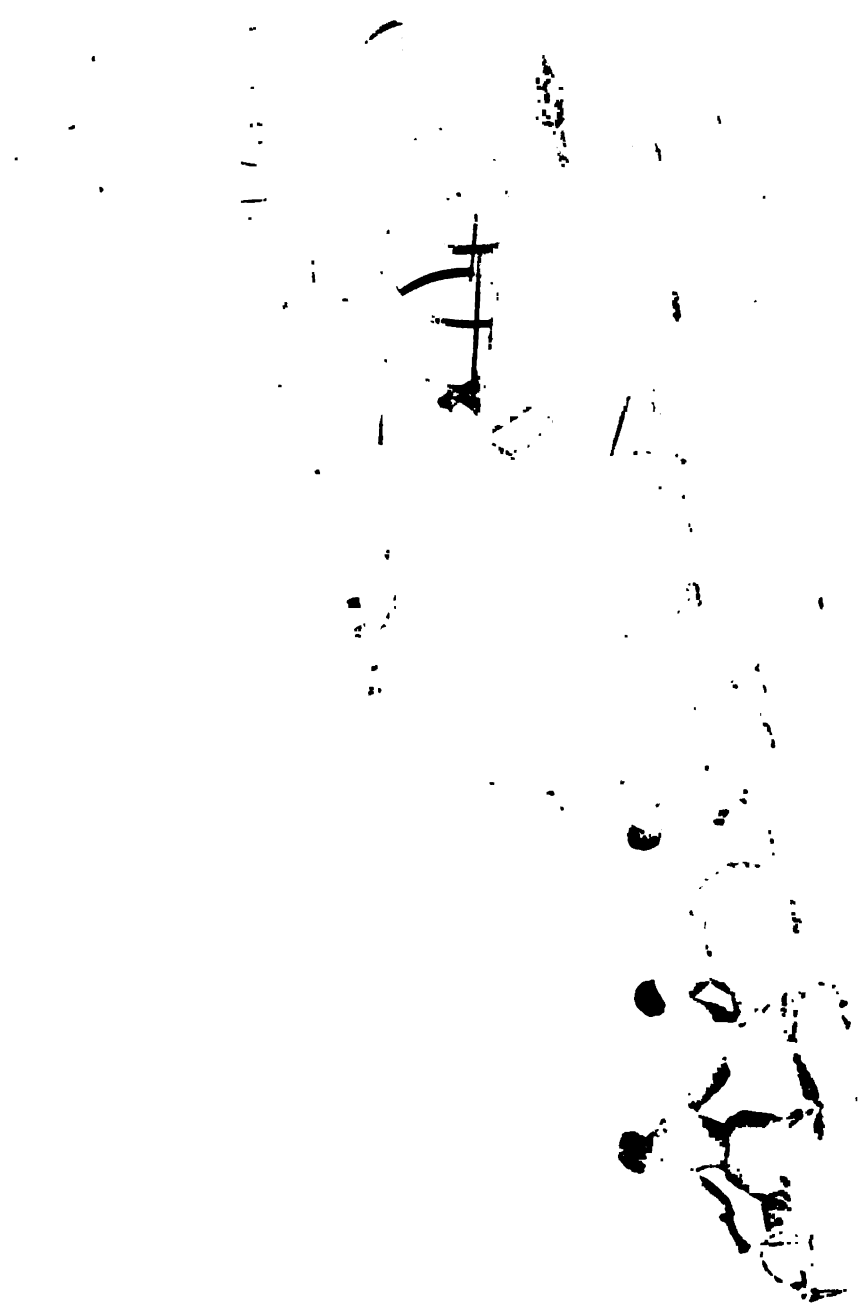
**Society of Amateur Photographers.**—*Regular Monthly Meeting, Tuesday Evening, November 14th.*—The meeting was called to order at 8.20, President C. C. Roumage in the chair. After the reading and approval of the minutes of the preceding meeting the President introduced Dr. Leo Baekeland, who made extended remarks on "Under What Conditions are Silver Prints Liable to Fade," accompanying his remarks with a few interesting experiments. The substance of his remarks will be found in the form of a paper on page 554. He has evidently given the matter practical, scientific study, and seemed to prove that a developed or partially developed silver image, where the silver is reduced to a metallic state is more permanent and stable against undermining effects of sulpho-hydrogen gases than the printed-out image. He exhibited several specimen prints illustrating the different points he desired to emphasize.

Dr. Janeway remarked that he was glad to note the experience of Dr. Baekeland in regard to the greater permanency of silver prints accorded with his, and is due to the greater thickness of the silver deposit on the paper. He had always advised sensitizing albumenized paper on a strong silver bath, and maintained that prints made on such paper were more permanent. At the conclusion of Dr. Baekeland's remarks a vote of thanks was unanimously accorded him.

Mr. F. C. Beach exhibited a model of an 8 x 10 folding hand camera, called the "Marlborough," sent by E. & H. T. Anthony & Co. It is very light, beautifully made, and fitted for double-swing movements and has a reversible back. The front base board is arranged to tilt downwards at an angle when it is desired to use wide angle lenses, and

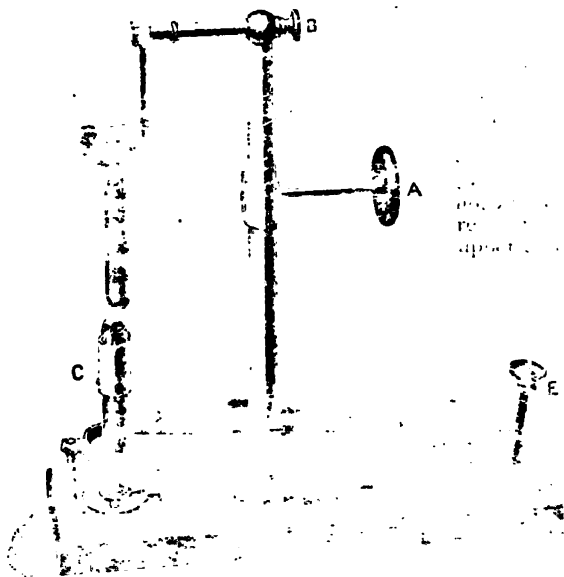
there is a very complete focusing arrangement of double racks. The accompanying cut gives a good idea of the general outward appearance.





## EXCHANGES AND REVIEWS.

Mr. Beach also showed a new, simple, and efficient lantern, designed by Charles Bescher, of London, which has a pivoted tress base, the lamp passing downward through a hole in the tress, and is adjusted by a screw. When this is rotated, it pushes down the pin at the bottom of the lamp and base is elevated or tilted. These are a quick and easy adjustment.



of the Committee on Progress of Science, and an automatic camera with bellows, which the committee presented papers read by the committee and "Molus Operable" of the improvement.

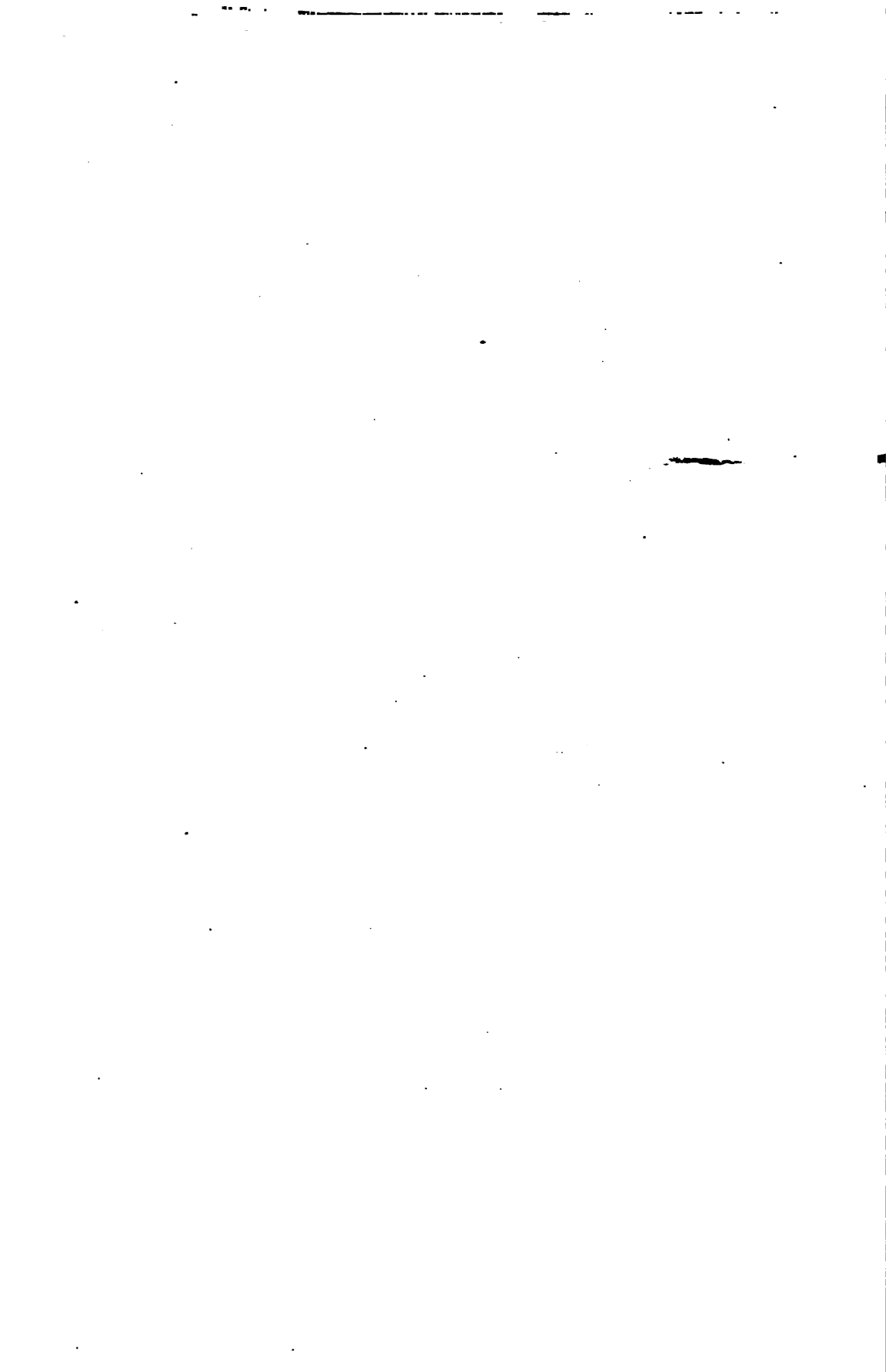
In the workroom, just after the demonstration of Velox paper, made by the committee, prints were made, and all developed as light of the room without damage.

Mr. F. C. Beach announced the death of J. T. of the *British Journal of Photography*, also a. and moved the suitable resolutions of sympathy be adopted by the Board of Directors, which was unanimously agreed. The meeting then adjourned.

## EXCHANGES AND REVIEWS.

THE INTERNATIONAL ANNUAL OF ANTHONY'S PHOTOGRAPHIC BULLETIN, 1896. Published by E. & H. T. Anthony Co., 591 Broadway, New York. F. J. Harrison.

As compared to the efforts of former years we regret to say that the *International Annual of Anthony's Photographic Bulletin* is



Mr. Beach also showed a new, simple electric hand arc lamp for use in the lantern, designed by Charles Beseler. The engraving illustrates one of its special features, which is a pivoted truss lever, the front end of which has a pin attached, passing downward through a hole in the baseboard, while on the other end is an adjusting screw. When this is rotated to the right it raises the rear end of the lever and pushes down the pin at the front end, while at the center or pivot the entire lamp and base is elevated or tilted at any desired angle, the object being to give the arc a quick and easy adjustment, with reference to the center of the condensers.

The lower carbon is fed upward by a bag on the rear end of the lever; if this should become loose, the bag can be held in an arm which is held downward, by a screw. There is also a knob on the back. The whole apparatus is very simple and well made, and when adjusted will burn absolutely steady for several minutes. It requires less skill to run it than a lime light. The lamp was well received by those present.

Dr. Janeway announced in behalf

of the Committee on Progress of Science and Art that at the next meeting a new automatic camera would be shown, producing positive pictures direct. The committee presented papers read by title as follows: "A New Primary Electric Battery" and "Modus Operandi of the Improvement of Negatives."

In the workroom, just after the meeting, Mr. Sievers made quite a successful demonstration of Velox paper, made by the Nepera Chemical Company. Several prints were made, and all developed and fixed in the bright incandescent electric light of the room without damage.

Mr. F. C. Beach announced the death of J. Traill Taylor, the well-known editor of the *British Journal of Photography*, also an honorary member of the Society, and moved that suitable resolutions of sympathy be drawn up and sent to his family by the Board of Directors, which was unanimously agreed to.

The meeting then adjourned.

## EXCHANGES AND REVIEWS.

THE INTERNATIONAL ANNUAL OF ANTHONY'S PHOTOGRAPHIC BULLETIN (Vol. VIII.), 1896. Published by E. & H. T. Anthony Co., 591 Broadway, New York. Edited by F. J. Harrison.

As compared to the efforts of former years we regret to say that this year's *International Annual of Anthony's Photographic Bulletin* is a decided disap-

pointment to us. The standard required nowadays for a publication of this kind is naturally high; the market is flooded with photographic annuals of all grades and prices. Until this year Anthony's *Annual* has been specially marked for its splendid typographical work and for its general high-class appearance, but this year shows a decided falling off even in this respect. As for its contents, the less said about the illustrations the better; the choice is very weak, and the process work is in many instances of inferior quality, although the printers have probably slaughtered the possible results.

The literary contributions are of general value. The frontispiece is an ordinary aristo print of no value excepting to the makers of the special brand of paper, and as for the three-color supplement, we really think it is inserted as a practical joke, so as to show the public what is *generally* termed three-color work. The specimen in question is bad in every respect. Notwithstanding all its shortcomings Anthony's *Annual* will interest a great many.

AMERICAN ANNUAL OF PHOTOGRAPHY, AND PHOTOGRAPHIC TIMES ALMANAC for 1896. Edited by W. E. Woodbury. Price, 75 cents, in paper cover, and \$1.25, cloth bound. Published by Scovill & Adams, New York.

In our last issue we gave a short notice of the above *Annual*, which, being so far ahead of any of its predecessors, deserves special mention. The general make of the '96 *Annual* is good, and will certainly pass muster with even the most fastidious. Mr. Woodbury has tried to please and interest all classes, and has certainly succeeded remarkably well with this most difficult task. Every article in the book is worth reading, names like Balagny, Bothamley, Burton, Hallock, Ives, Levy, Madder, Robinson, Scolik, Stieglitz, Stillman, Toch, Todd, etc., etc., vouching for the quality.

The pictorial part of the book is also exceptionally good, artists like Annan, H. P. Robinson, Stieglitz, J. C. Carpenter, Eickemeyer, Dumont, Clements, Sarony, Berg, Dresser, Cadby, Moreno, Wilms, Breese, etc., etc., contributing to the embellishment of its pages. We cannot say that we favor the use of colored paper for the full page reproductions, as it is apt to cheapen the appearance of a high-class book. The frontispiece—"A Wet Day on the Boulevard"—by Alfred Stieglitz, is printed somewhat too heavy to be entirely satisfactory. Probably the copies do not all run alike, as in large lots it is nearly impossible to get the photographs exactly alike.

The three-colored supplement by the Coloritype Company gives us a good idea of the progress made in the three-color process, which is gaining favor daily.

No one interested in photography, whether scientific or pictorial, can afford to be without the '96 *Annual*, as it is certainly unique in this class of photographic literature.

PHOTOGRAMS OF '95. A Pictorial and Literary Record of the best Photographic Work of the Year. Published by Dawbarn & Ward, Ltd., London. Price, 50 cents.

The purpose of the book is set forth in its title. The work has been well done, and the result is in every respect high class. The book will be of great value to those interested in exhibitions, as it contains specimens of many of the leading artists' work, and also a very excellent and careful criticism of the same, by so well-known a writer as Mr. Gleeson White. Although principally devoted to English work, the book is nevertheless international, as it contains brief notes on American, Japanese, New Zealand and Indian work and workers, written up by representative men from these places.

Everything connected with the book is first-class, and every photographer interested in pictorial work ought to possess a copy.

PHOTOGRAPHURE. By Henry Blaney. Published by the Scovill & Adams Company, New York.

Now that even the amateur photographer is beginning to interest himself for the photo-mechanical processes, it is but natural to see the subject written up thoroughly. All those interested in the photographure process will find this little volume of value, as the subject is fully dealt with.

**American Lantern Slide Interchange.**—The annual test of slides, representing the contributions of twenty clubs and societies, took place on the evenings of November 19th and 20th, at the headquarters of the Interchange, 361 Broadway, N. Y. The new Board of Managers for the season of 1895-96 consists of F. C. Beach, of New York; W. H. Rau, of Philadelphia; Will H. Olmsted, of Syracuse, N. Y.; John S. Paterson, of Albany, N. Y., and W. H. Cheney, of Orange, N. J. All were present the first night but Mr. Paterson, and the second night all but Mr. Rau. Mr. John M. Justice, of the Frankford, Pa., Camera Club, was invited to sit with the committee the first night. There were a less number of slides to test than last year, in consequence of a few clubs declining to contribute. The new clubs admitted are the Rockford Camera Club, Rockford, Ill.; Omaha Camera Club, Omaha, Neb.; Oregon Camera Club, Portland, Ore.; the Lakeville (Conn.) Club of the Hotchkiss School, and the St. Louis Photographic Society. The clubs failing to send sets were the Columbia (Oregon) Camera Club, Elizabeth (N. J.) Camera Club, Schuylkill Camera Club, Detroit Lantern Club, Memphis Camera Club, Providence Camera Club, the New Orleans Camera Club and the St. Louis Camera Club. There were approximately 1,700 slides sent, and about 1,000 selected, which were divided into nine sets, averaging 100 slides each, or more than sufficient, with the three foreign sets in circulation, to furnish each club with one set of slides a month for the season of ten months. The societies and clubs actively participating in the Interchange for 1896 are: Society of Amateur Photographers of New York, Newark Camera Club, Orange Camera Club, Frankford (Pa.) Camera Club, Photographic Society of Philadelphia, Bethlehem (Pa.) Photographic Society, Photographic Club of Baltimore City, Rockford (Ill.) Camera Club, St. Louis Photographic Society, Omaha Camera Club, California Camera Club, Oregon Camera Club (Portland, Ore.), Minneapolis Camera Club, Chicago Society of Amateur Photographers, Toronto Camera Club, Buffalo Camera Club, Syracuse Camera Club, Albany Camera Club, Portland (Me.) Camera Club, and Lakeville Camera Club.

The prevailing fault with slides thrown out was that they were hard and dense, and in many cases thin or weak; others were poorly colored, or full of dirt or dust.

But the labeling and matting were better than in previous years. In the case of new and other clubs the system of marking letters on each slide was adopted, indicating its fault; A meaning flat, weak or over-exposed, and B meaning hard, chalky, dense or under-exposed.

Of the newer clubs the Toronto Camera Club had the highest average of acceptable slides. The Buffalo Club had adopted a system of double examination by two separate committees before submitting their slides to the Interchange, which resulted in two-thirds of those sent being accepted. The slides of all the clubs were tested in an electric lantern projected upon a white wall, then examined (the seconds) by the lime light, the size of the picture being about eight feet square. Two evenings were occupied. There are three foreign sets now in circulation, the slides of the Photographic Society of Japan, the Affiliated Societies of the Royal Photographic Society of Great Britain, and the London Lantern Society. Another set is promised from the Photographic Society of Douai, France. Altogether the Interchange will have a very good collection of slides for 1896.

**The Toronto Camera Club** has lately amended its by-laws, allowing women to become active members and have the right to vote. We congratulate the club on this step, and are sure it is a move in the right direction.



### RAPID PHOTOGRAPHIC PRINTING.

Somewhat in the line of the automatic photographic printing apparatus described in the September number of the AMERICAN AMATEUR PHOTOGRAPHER is the illustration in this number opposite page 565, from a negative by Mr. Alfred Stieglitz, entitled "On Lake Como," a few thousand of which were required within a short time in order to appear with this number. These prints were made, we are informed, by the Nepera Chemical Co., Nepera Park, N. Y., on their improved matt surface Velox paper, and the exposures were made by a boy unskilled or unacquainted with photography, on the average of five seconds each about two feet from a Manhattan electric arc lamp, which is preferred on account of its steadiness and uniformity; and many other exposures were made to diffused north daylight at an average of five seconds each. It should also be stated that these thousands of exposures were made entirely from one negative, without injury to it, in an incredibly short time, as compared with the slow process of sun printing. Owing to the strange regulations of the Post Office Department, a print placed on a mount doubles the postage; hence it is necessary that the print be unmounted and the sensitized sheet the same size as the pages of the magazine.

We think the illustrations prove the process to be a remarkably simple one, and one which can be used to great advantage in the illustration of books, etc. Most any tone can be obtained, according to the length of time the print is left in the developer.

### APPARATUS FOR WASHING NEGATIVES.

This light and convenient negative washer is specially intended for use by tourists, as with it negatives can be thoroughly and expeditiously washed with a small amount of water. It consists of a standard which holds the jet. To the metal pipe is connected a rubber tube which has two bulbs attached to it. The lower end of the tube is placed in the vessel of water, and on squeezing the lower bulb a fine continuous spray of water is projected on the plate. Similar contrivances are in use in the United States for shampooing at home. For our engraving we are indebted to *American Supplement*.



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## SALE AND EXCHANGE.

[This department is for the benefit of SUBSCRIBERS who have photographic material, apparatus or books which they wish to exchange, and such wants will be inserted free of charge one time. For each additional insertion we will charge one dollar per month. Dealers advertising in these columns will be charged double our ordinary advertising rates.]

*For Exchange*—A one-horse-power steam engine for a burnisher. J. S. H. Holmes, 348 Ottawa St., Grand Rapids, Mich.

*For Sale*—Dallmyers'  $6\frac{1}{2} \times 8\frac{1}{2}$  wide Angle Lens; new, \$25.00; Zeiss Lens, Series V, No. 1, new, \$15.00. Address Room 705, 34 Washington St., Chicago.

*For Sale or Exchange*—A photograph tent, 14x21 feet, with complete tin-type outfit; also a beautiful water color panel, 6x18 inches, value \$10.00, for \$3.00 or back numbers of any photographic magazines. F. A. Leonard, Deerfield, Dane County, Wis.

*For Sale*—Century Hawkeye,  $6\frac{1}{2} \times 8\frac{1}{2}$ , folding, with a Ross New Series Extra Rapid Universal Symmetrical Lens, fitted to a Bausch & Lomb shutter. Three double plate holders. Used but a short time. Cost \$130.00. Will sell for \$90.00. Address J. C. Wadleigh, Lowell, Mass.

*For Sale*—I have a 4x5 No. 2 Haweye, 1890 model, fitted with a fine lens for rapid work; also one-half dozen 4x5 plate holders. The above are in excellent condition, and will be sold cheap. Address H. Chickering, Box 105, Rutherford, N. J.

*For Sale*—One Entrikin Eureka Burnisher, inch roller, and 1 paper cutter, 6 inch, both as good as new. John E. Davis, Butte, Mont.

*For Sale*—The following lenses, all new: Beck R. R., No. 5, 8x10 Iris, \$50; Ross W. A., No. 5, 10x12, \$32; Ross Rap. Sym., 9 in., 5x8, Aluminum, with

Bauch & Lomb Shutter Aluminum, \$46; Swift Rap. Paragon, 5x8, with Bauch & Lomb Shutter, \$39; Morrison W. A., No. 4, 5 in., 5x8, \$9; Busch Pantascope, No. 2, Extreme W. A., List \$30, at \$15; Gray Landscape, No. 3,  $6\frac{1}{2} \times 8\frac{1}{2}$ , \$6; French W. A., 5x8 (Importer's Name), List \$20, at \$12; French Single,  $6\frac{1}{2} \times 8\frac{1}{2}$ , \$5; Beck W. A., No. 2, 5x7, \$22.50. W. H. Gray, 521 Forest Ave., Oak Park Ill.

*For Sale*—A Ross Universal Extra Rapid Lens, 10x12, and Columbian triplex shutter. List price, \$139.50: will sell for \$100. Also a 4x5 C daylight Kodak, with plate attachment, 3 extra plate holders and roll holders. List price, \$33.00; will sell for \$18.00. Address, Albert Burnton & Co., 49 Sixth Ave., New York City.

*For Sale*—The Platinotype Company's electric light, solar, contact and art business. Will be sold outright or worked on shares. Here is a chance for some one to step right in and commence business. Address, Willis & Clements, 1624 Chestnut St., Philadelphia, Pa.

*Wanted*—A good, practical, Single Projection Lantern for home use. Address, with full description and price, P. O. Box 123, Syracuse, N. Y.

*For Sale*—I have 4x5 Blair Camera B. & L. shutter, 2 lenses, 12 plate holders and developing outfit for sale cheap for cash. Also No. 3 Kodak. Walter Kimbark, 80 Michigan Ave., Chicago.

Amateurs who intend to contribute to the exhibitions should use Willis & Clements' new Rough Surface Cold Bath Platinotype Paper. Nothing has ever approached it for art effects. See ad. on page xv. Yours very truly, Willis & Clements.

*tip-in*

**Vol. VII.**

**DECEMBER, 1895.**

**No. 12.**

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Sample Package Paper and developer (black) .....	.25
“ “ “ “ “ (sepia) .....	.35
Sample print, portrait or landscape, on the “Rembrandt” card.....	.25

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